



INSTRUCTIONS FOR USE

PCR Eleva

PHILIPS COMPUTED RADIOGRAPHY

Release 1.0

English

PHILIPS

PCR Eleva

INSTRUCTIONS FOR USE

English

Instructions for Use

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1 Introduction

1.1 The PCR Eleva

This system is designed for digitizing cassette exposures on conventional examination workstations in diagnostic radiology. The PCR system uses so-called image plates instead of screen-film systems.

With PCR systems you can make, digitize, process and transfer filmless cassette exposures. They are fully automatic – from the entering of the patient data and processing parameters through to film composition.

You can print any required films of these exposures.

The PCR system automatically communicates with other DICOM partners and archives via the hospital network. Two-way data transfer with an existing RIS (Radiology Information System) guarantees efficient data communication within the radiology department.



1.2 About these Instructions for Use

This manual is intended to make it possible for you to work with the device described safely.

You may not be able to use some of the functions described in this manual unless you have the corresponding license.

Please pay particular attention to all the information given in chapter 2 “Safety”.

Conventions



DANGER!

This symbol identifies instructions which you must always observe in order to avoid injuring patients and/or staff.

Warning!

This symbol identifies instructions which you must observe to avoid damaging the device described.



This is used to identify special advice, e.g. to assist the operator or to improve an operating sequence.

- 1 Single steps of instruction sequences are preceded by consecutive numbers (as shown here).
 - The result produced by a step is preceded by a dash (as shown here).

System configuration

This manual describes the system with its broadest range of features, including all possible functions, options and all accessories. It is not essential for your system to have every function described.

You can only use some of the functions if you have received training in them by an application specialist, and have specially logged on to get these privileges. Such functions are marked “For the system manager only”.

Depending on the features you have, other manuals may be delivered with your system; these contain instructions on safety, calibration, system tests and service and maintenance.

These Instructions for Use are translated from the German and were created, authorized and marketed by Philips Medical Systems DMC GmbH under the number given on the front cover.

1.3 Normal use

The PCR Eleva system is designed to process, display and output radiological images produced by means of cassette exposures and processed within the PCR system.

The PCR Eleva system is not suitable for processing and displaying images produced on other manufacturers' systems or compressed using non-system software.

This device may only be operated by suitably qualified persons who have been instructed on how to operate the device.

1.4 Prohibited use

The system is not approved for diagnosis.

1.5 Conformity



This Medical Device meets the provisions of the Medical Device Directive 93/42 EEC (93).

Information about conformity with international/national standards can be provided by

Philips Medical Systems DMC GmbH
Quality Assurance Department
Röntgenstrasse 24
D-22335 Hamburg
Fax: (+49) 40 / 5078 - 2147

1.6 Training

To work with the PCR system you must have fundamental specialist knowledge of radiology, image-based medical diagnostics and digital image processing.



DANGER!

The incorrect use of image processing functions can give rise to false information in the image. Image information of relevance to diagnosis may be suppressed or misrepresented. You should have expert knowledge of digital image processing to change processing protocol settings.

Training requirements for this X-ray equipment can vary from country to country. The user must ensure that the operators are trained in accordance with local and national regulations of a statutory nature.

Philips recommends that all operators take part in special training on how to handle this product safely.

Further information on training is available from your Philips Service Organization.

2 Safety

2.1 Safety

You may only use this device in compliance with the safety instructions in this manual and not for purposes other than those for which it was intended.

It is always the user who is responsible for conforming to the regulations which apply to the setting up and operation of medical equipment.



DANGER!

You must not use the equipment if it has any electrical or mechanical defects. This particularly applies to faults in indicators, displays, warnings and alarms.

- If the user wishes to connect the equipment to other equipment, components or assemblies and if it is not apparent from the technical data whether it can be safely combined with such equipment, components or assemblies, the user must consult the manufacturers concerned or an expert to ensure that the safety of the patient, operating staff and the environment is not affected by the intended combination.
- Philips only accepts responsibility for the safety features of its products if maintenance, repairs and modifications are performed by Philips or persons explicitly authorized to do so by Philips.
- As with any technical appliance this equipment also calls for proper operation and regular competent maintenance and care, which are described in the section “Service and cleaning”.
- If you operate the equipment incorrectly or if the user fails to maintain it properly, Philips cannot be held liable for any resulting faults, damage or injuries.
- ***Safety circuits may be neither removed nor modified.***
- ***You may only remove or open parts of the housing if you have been instructed to do so by this manual.***

2.2 Electrical safety

This device conforms to safety class I and type A according to IEC 60601-1. This equipment may only be operated in medical rooms which meet IEC requirements.

To guarantee the reliable operation of the workstation and to prevent the device from overheating, the device openings must not be blocked off or covered. The workstation must never be positioned near radiators.

Some of the workstation components are high-voltage. Only electricians may remove the device's covers.

2.3 Mechanical safety

Warning!

You may not transport this equipment while it is in operation. Shut down the equipment before transportation and ensure that all peripheral parts of the system (monitor, mouse, keyboard, cables etc.) are disconnected and safely transported.

2.4 Fire safety

DANGER!



- *Only use fire extinguishers intended for use on electrical and chemical fires, and marked as such. Any attempt to extinguish electrical fires with water or other liquids can result in serious personal injury.*
- *The air vents may not be covered when the device is switched on.*

2.5 Laser radiation warning

All plate readers use laser radiation (class IIIB, 50 mW).

DANGER!



- *Under no circumstances should you open the housing of the plate reader. Contact, especially eye contact, with laser radiation can cause damage to health.*
- *In the event of a malfunction, please notify suitably qualified staff only.*

2.6 Special safety information

2.6.1 Loss of data due to power outage

This device should be connected to an uninterruptible power system to prevent database damage and image loss in the event of a power outage.

2.6.2 Inferior quality due to multiple exposure

Images processed using the UNIQUE technique must only have been exposed on the cassette as a single exposure. If a cassette is exposed more than once the quality when processing using the UNIQUE technique can deteriorate due to misinterpretation of the image information.

2.6.3 Damage as a result of incorrect cassette insertion

Always slide the cassettes into the cassette compartment of the plate reader with care. Incorrect insertion of a cassette, for instance if it is at an angle, can damage the plate reader. Please observe the instructions in chapter 5.1.2.

2.6.4 Data inconsistency

Do not switch off the operator's console at the power switch if the PCR application program is displayed. This can lead to database errors or data inconsistencies. Always follow the sequence for switching off as described in chapter 4.

2.6.5 Cleaning and care

Warning!

- ***Ensure that no liquid can enter the devices, otherwise a short circuit or corrosion of components may occur.***
- ***Only use a moist cloth with a mild detergent to clean computer housing, keyboard, mouse and monitors.***

For further information on this see chapter 12.3.

2.7 Electromagnetic compatibility (EMC)



The system conforms to the classification Group 1, Class B under CISPR 11. It contains Class A IT components according to CISPR 22. Although it has been shown that this does not have a detrimental effect on the performance and safety of the system, electromagnetic incompatibilities may arise when operated in residential areas. In such an event, it may be necessary for the user to take appropriate measures.

In accordance with its intended use, this apparatus complies with the European Council Directive concerning medical devices, which documents CE-marking. That includes specifications on the maximum permissible level of electromagnetic emission and requirements as to immunity to interference by other devices.

It is not possible, however, to exclude with absolute certainty that radio signals from high frequency equipment, which is fully compliant with the EMC regulations, will not affect the proper function of this system. If a device has a comparatively high level of transmission power and is operated in close proximity, the EMC concerns (the risk of interference) may be particularly pronounced. It is therefore recommended that the operation of equipment of this type, such as mobile telephones (cell phones), cordless microphones, and other similar mobile radio equipment, be avoided in the vicinity of this system.

For further information on this, see chapter 13.2.

Explanation

Electronic apparatus that satisfies the EMC requirements is designed so that under normal conditions there is no risk of malfunction caused by electromagnetic interference. However, in the case of radio signals from high-frequency transmitters with a relatively high transmission power, the risk of electromagnetic incompatibility when operated in close proximity to electronic apparatus cannot be totally ruled out.

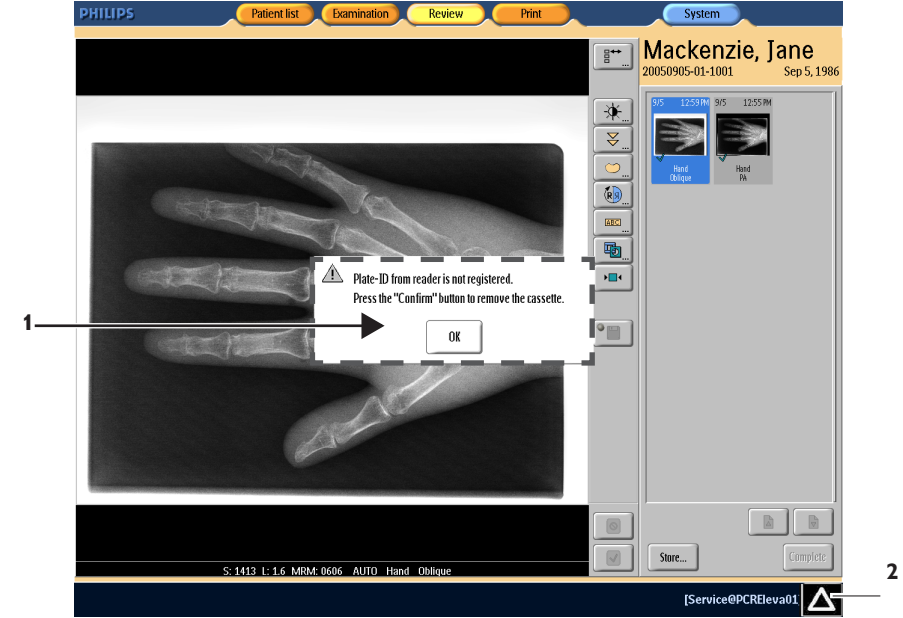
In unusual circumstances unintended functions of the apparatus could be initiated, possibly giving rise to undesirable risks for the patient or operating staff.




For this reason, all kinds of transmission with mobile radio equipment should be avoided. This also applies when the apparatus is in “standby” mode.

Mobile telephones must be switched off in designated problem zones.

2.8 Error messages

When an error has occurred in the system or a part of the system, an error message appears on the operator’s console monitor with instructions on how to rectify it.
Example:



Legend	Function	Meaning	What you must do
1		Error message (e.g.)	
2	System status display	Current system error status:	
		Green circle: Everything OK	
		Yellow triangle: Error e.g. reader not ready for use.	Click on symbol: more information appears.
		Red cross: Unrecoverable error	Click on symbol: more information appears.

**DANGER!**

Even if no error message appears, but the equipment does not function as usual (first signs of a defect) Philips Service Organization must be informed.

3 System description

The basic system consists of

- an operator's console with monitor or touch screen, barcode reader, keyboard and mouse
- a plate reader.

When you work with a touch screen you require neither a mouse nor keyboard for operation.

You can combine more than one plate reader and operator's console to form a system.

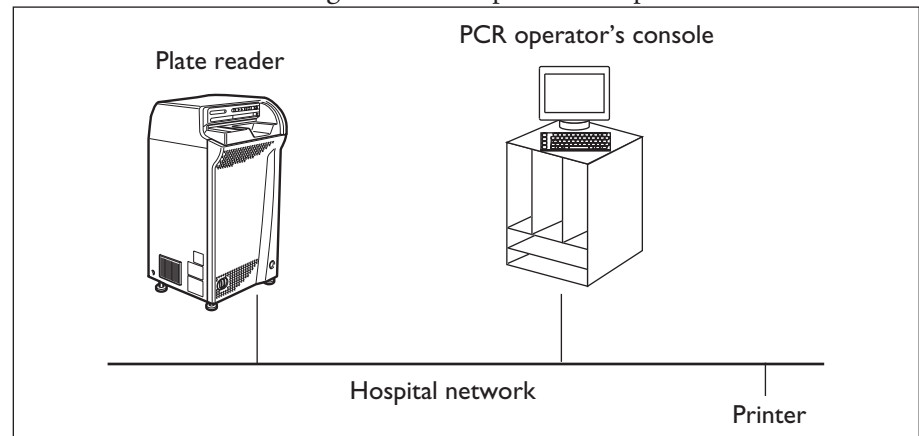
During exposure there is no mechanical connection between plates and system, so that in the event of incorrect configuration or cassette use, the system cannot, for instance, accurately show the status of a flipped image or the assignment to a patient.



Possible configurations

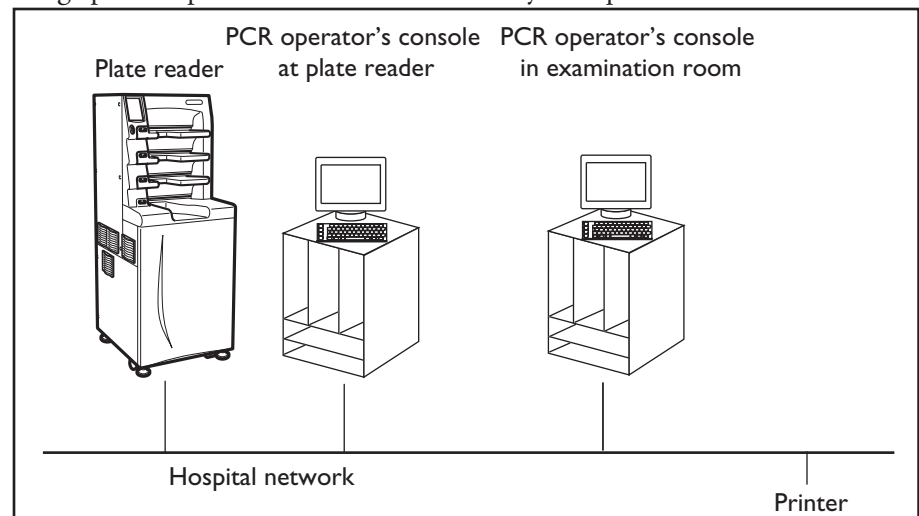
One-console system with one plate reader

This configuration is the basic configuration for a PCR system. You can work with or without being connected up to the hospital network.



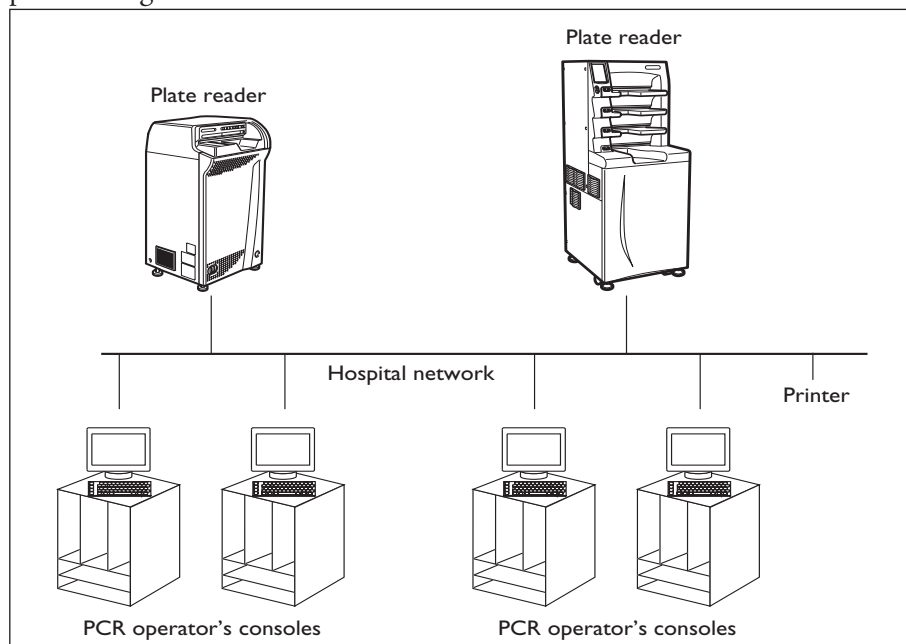
Multiple-console system with one plate reader

This configuration is the extended basic configuration. To achieve a more efficient workflow, you can set up more than one operator's console, e.g. in the various examination rooms and in patient admissions. At the same time, the entire system is connected up to the hospital network. The assignment of image plate to patient and vice versa is always unique.



Multiple-console system with more than one plate reader (option)

With configurations of this type you can read out any plate cassette on any plate reader, regardless of the operator's console on which you assigned the image plate, or with which console the patient data is managed. After readout the image always comes to the operator's console to which the image plate is assigned.



The following applies to all configurations:

- All operator's consoles have independent worklists and are synchronized with the RIS separately.
- On any one operator's console you can view, process, print and export only the images assigned to it. You should therefore perform an examination to the fullest possible extent on one operator's console only.

Server and client:

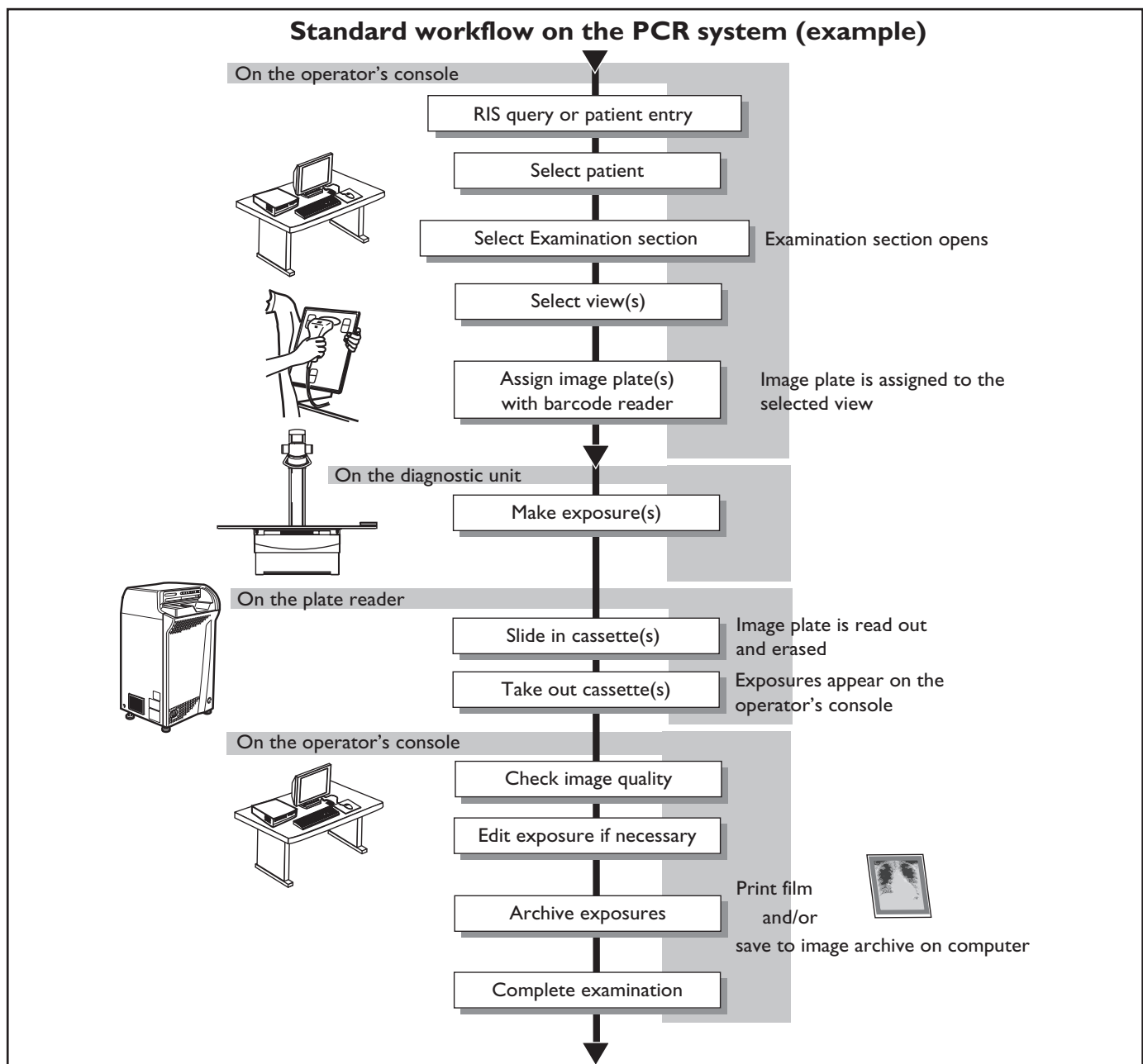
- In a multiple-console system, one console is always the server, which assigns the image plates and distributes the images. If this breaks down or is not switched on, no image plates can be assigned or images read out in the entire system. Always switch the server on first and off last.
- If, in a multiple-console system with more than one plate reader, the server is down, the system manager can convert the operator's consoles which operate another plate reader into servers so that it is possible to continue working with part of the system.

3.1 Standard workflow

The following diagram shows the standard workflow with the PCR system. You will find alternatives to the described assignment with the barcode reader in the rest of the manual.

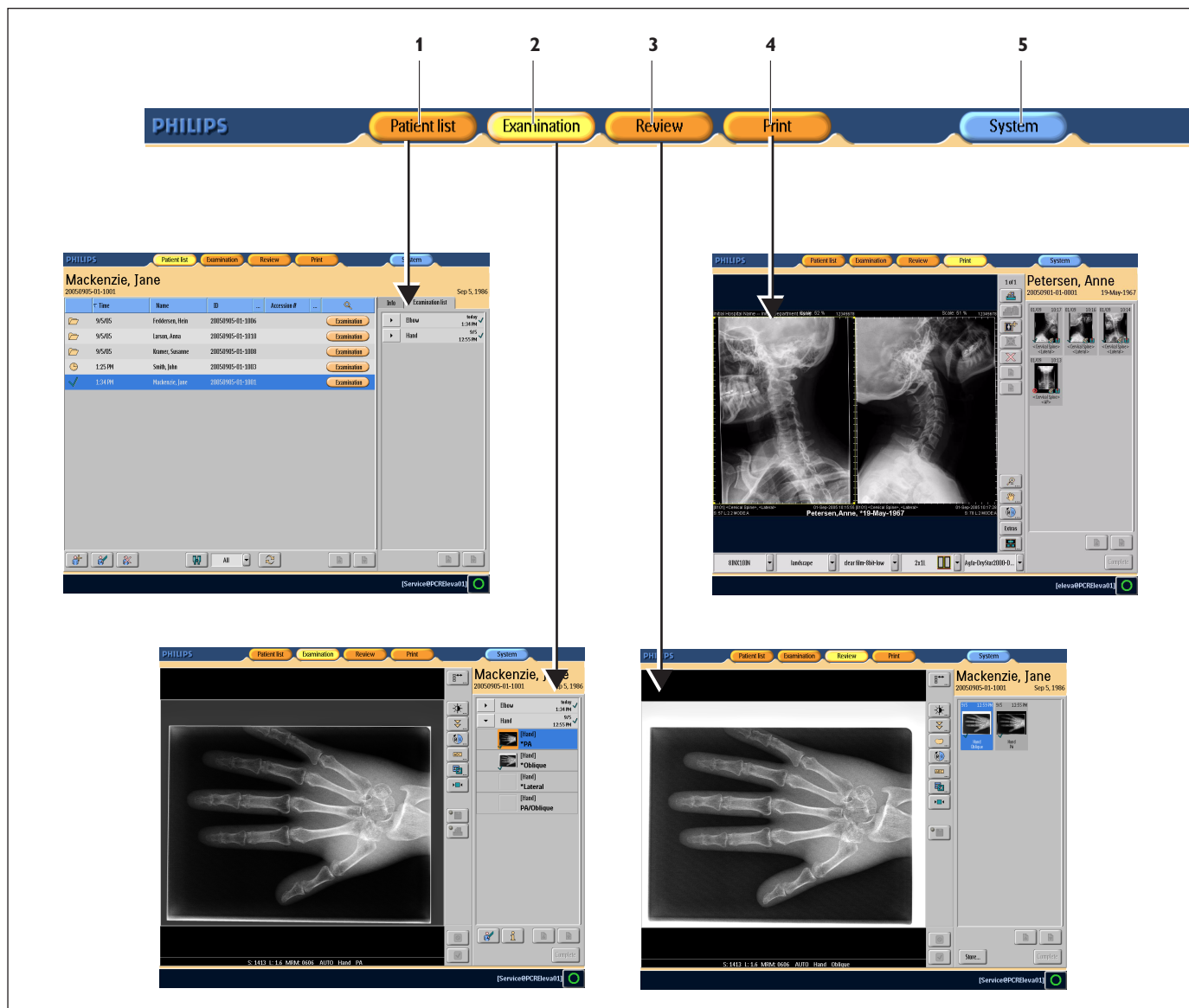
The differences to conventional radiography are as follows:

- You work with plate cassettes instead of film cassettes.
- Before radiography, you must assign the plate cassette to a view using the barcode reader.
- After radiography, you must read out the plate cassette in the plate reader.
- The X-ray exposure is automatically transferred from the plate reader to the operator's console.
- For filing purposes, you can print out the X-ray exposure or save it on computer.



3.2 The operator's console

Overview of the sections



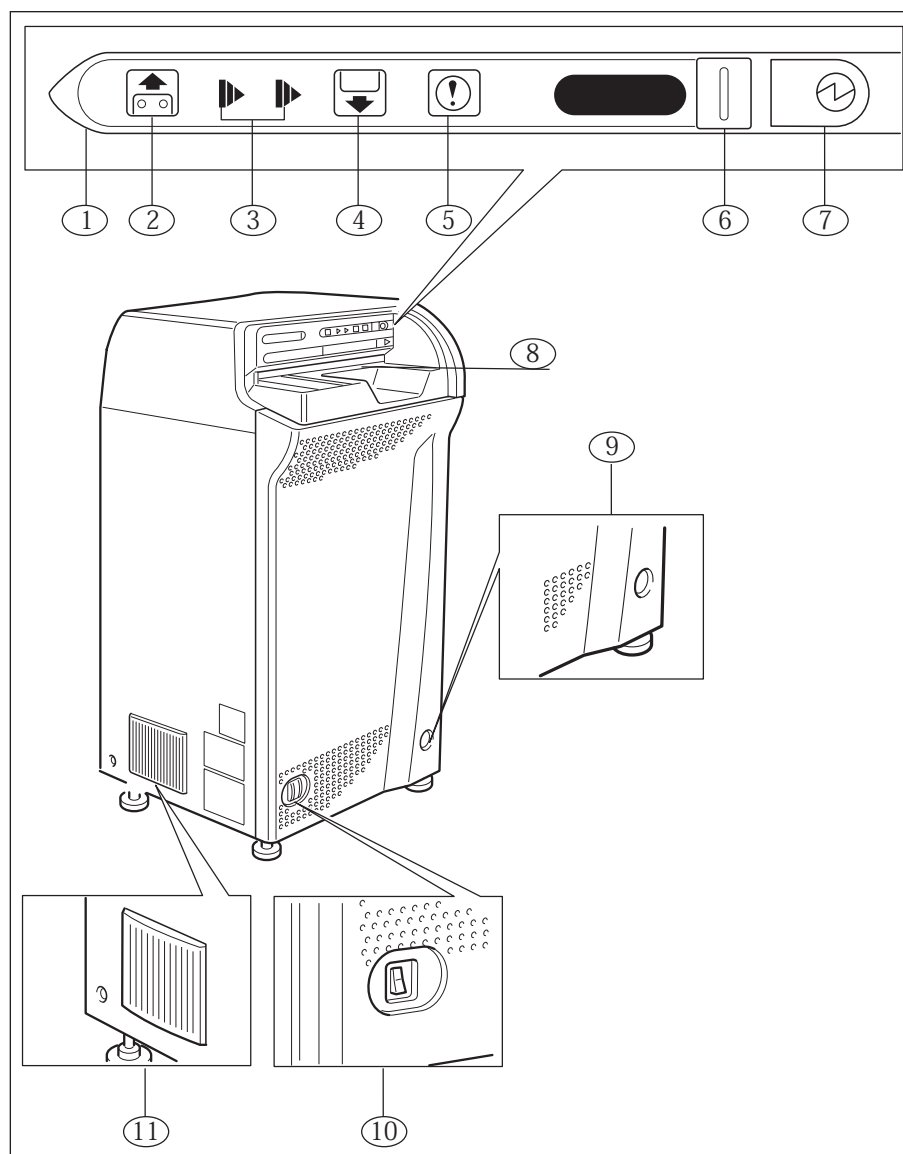
You can select the sections using the main selector buttons (1-5). When a section is selected the button for it turns yellow.

You can do the following in the sections:



Number	Function	Meaning
1	Patient list	Enter patient and examination data and select patients.
2	Examination	Control the examination, assign and insert image plate.
3	Review	Check and, if necessary, improve the image quality.
4	Print	You will find the printing tools here.
5	System	Exit the application program, functions for the system manager.

3.3 PCR plate reader

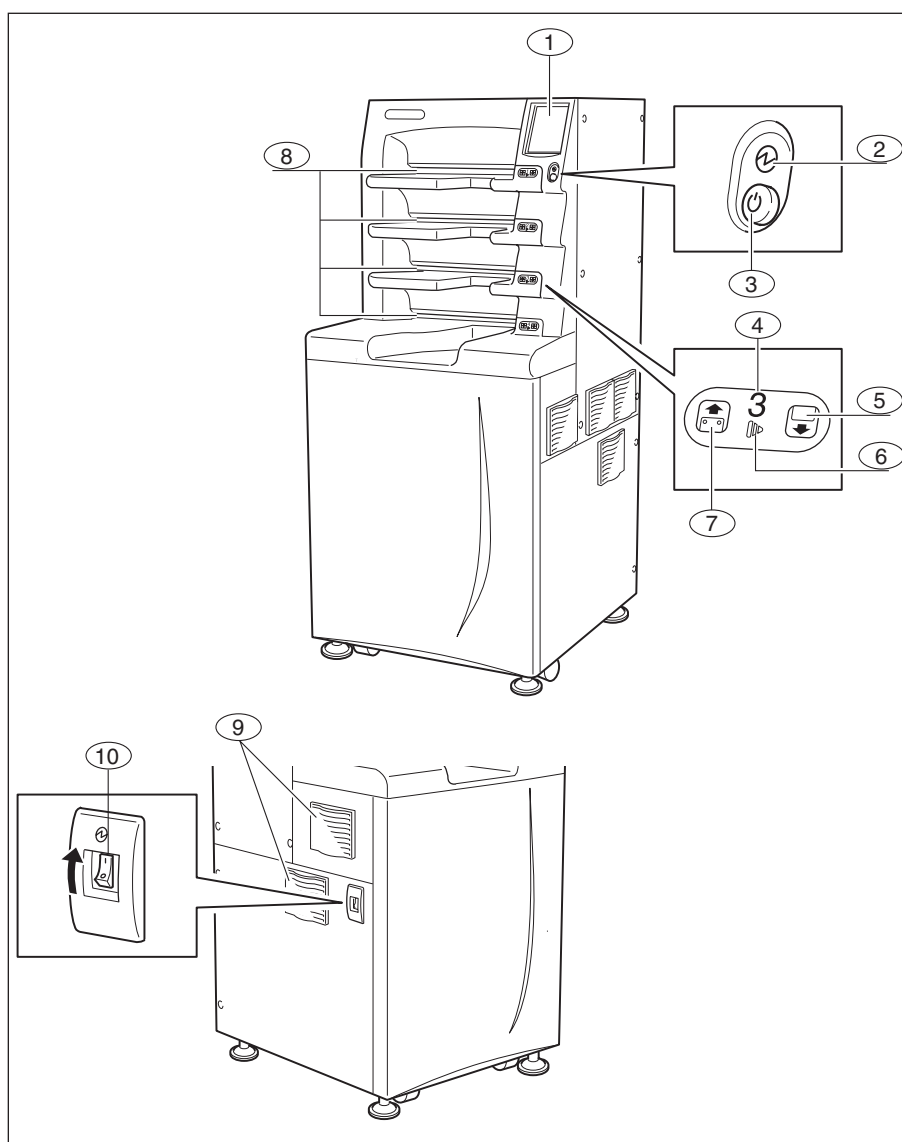
3.3.1 The PCR Compano plate reader



The plate reader reads out the exposed image plates. The image plates are contained in the plate cassettes.

No.	Meaning
1	Control panel with operating indicators
2	Load lamp Lights up green once the start-up procedure after switching on has been successfully completed and the plate reader is ready to process cassettes.
3	Status displays for cassette processing They flash during cassette processing.
4	Unload lamp Lights up green once cassette processing is finished. The cassette can be taken out.
5	Message indicator When it lights up (yellow), a window with special instructions appears on the monitor of the operator's console. Follow these instructions. If an error message appears, an audible warning signal is given.
6	“Erase” button for primary and secondary erasure Pressing the button once activates the secondary erasure mode, and  appears next to the button. Press it again to activate the primary erasure mode, and  appears. To return to the routine mode, press the button again.
7	Pilot lamp Lights up green when the main switch is in position “I” (on).
8	Cassette compartment For exposing a cassette with the image plate.
9	Reset switch Only for restarting in the event of disruptions; do not press it under normal operating conditions.
10	Main switch Is always left in position “I” (on). Switching it off is only advisable in the event of prolonged stoppages.
11	Dust filter/ventilator A dust filter is fitted over the ventilator.

3.3.2 The PCR Corado and CosimaX plate readers



The plate reader reads out the exposed image plates. The image plates are contained in the plate cassettes.

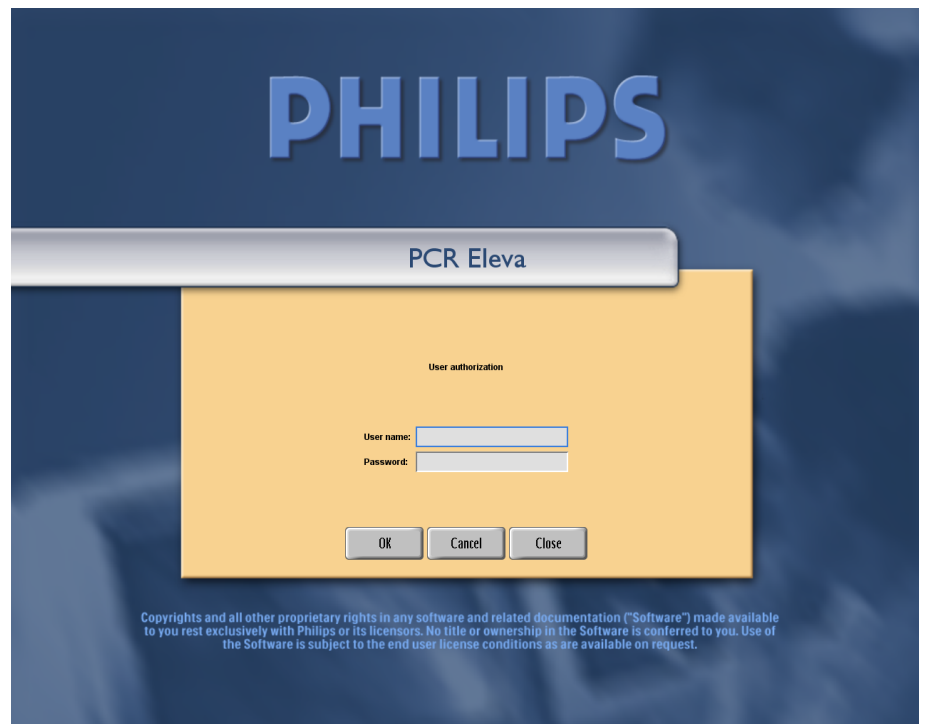
No.	Meaning
1	Control panel Plate reader's touch-sensitive control panel (touch screen).
2	Pilot lamp Lights up green when the main switch is in position "I" (on).
3	Power switch Switches on the plate reader if the main switch is in position "I" (on).
4	Cassette compartment number
5	Unload lamp Flashes blue once cassette processing is finished. The cassette can be taken out.
6	Processing lamp Flashes while the cassette is being processed by the plate reader. During this time the cassette is locked in the cassette compartment.
7	Load lamp Lights up green once the start-up procedure after switching on has been successfully completed and the plate reader is ready to process cassettes.
8	Four cassette compartments For the simultaneous processing of up to four cassettes.
9	Dust filter/ventilator A dust filter is fitted over the ventilator.
10	Main switch Is always left in position "I" (on). Switching it off is only advisable in the event of prolonged stoppages.

4 Switching the system on/off

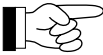
4.1 Switching on

Philips recommends the following sequence:

- 1 Switch on PC.
- 2 Log on to program.
 - Enter user name
 - Enter password
- 3 Switch on the plate reader.



4.2 Switching off



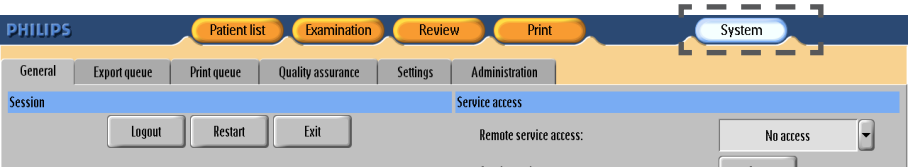
The system is designed for continuous operation. It is therefore only necessary to switch off all components in the event of prolonged stoppages.

4.2.1 One-console system

- System
- 1

Switch off plate reader.
- 2

Press System
 - The System section appears



- Exit
- 3

Press Exit
- 4

Switch off PC

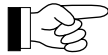
4.2.2 Multiple-console system

Proceed as under 4.2.1, but switch the server on first and off last.

5 PCR plate reader

5.1 The PCR Compano plate reader

5.1.1 Switching on/off



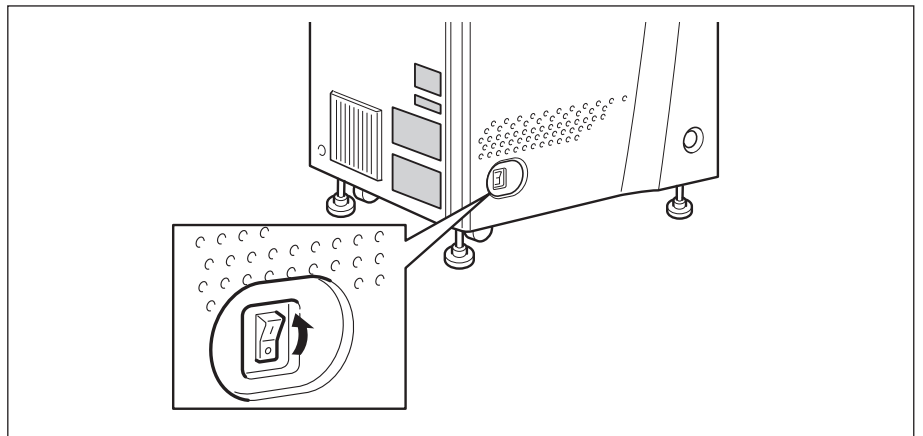
The plate reader is designed for continuous operation. It is therefore only necessary to switch it off in the event of prolonged stoppages.

Switching on

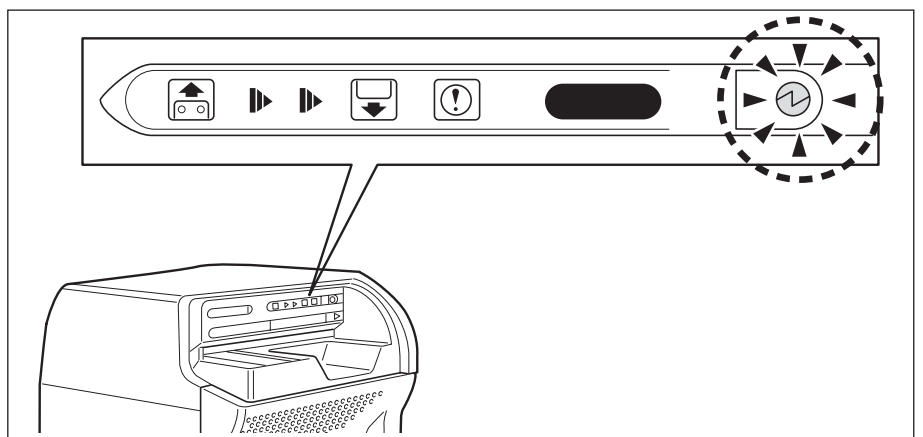
Pre-condition:

The PC and the application program on the operator's console have been started up.

- 1 Press main switch to the "I" position.

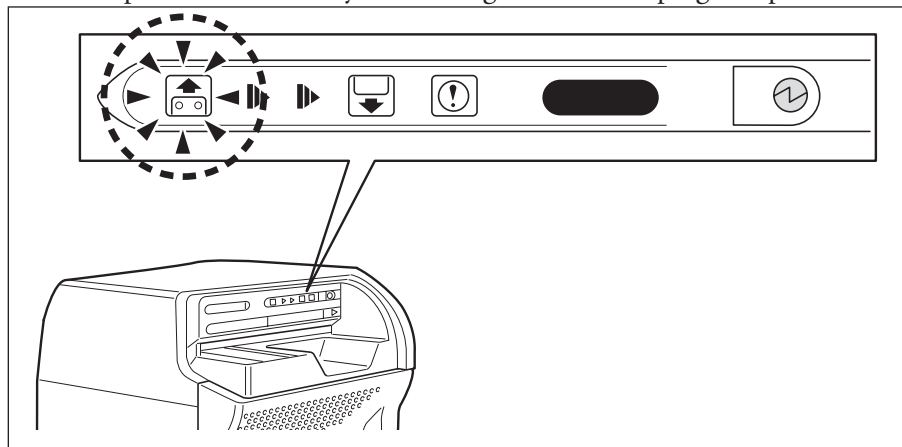


- The pilot lamp on the control panel of the plate reader lights up.



- The plate reader begins the start-up procedure, which takes a short time. Then the load lamp lights up.

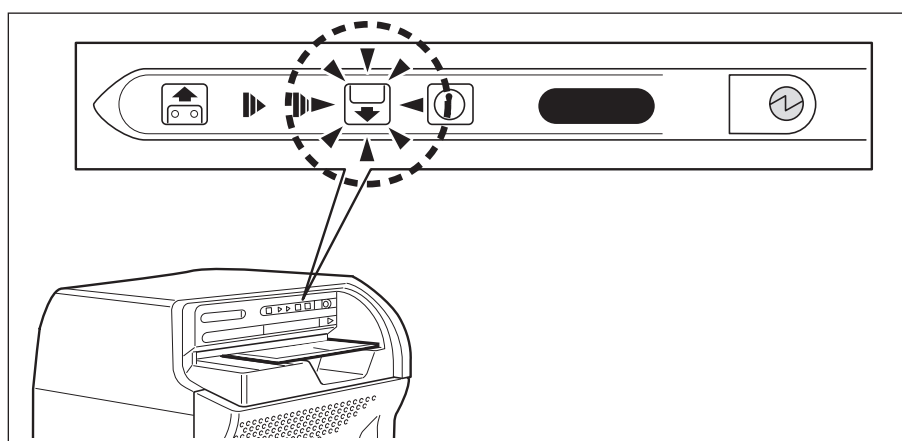
- The plate reader is ready when the green load lamp lights up.



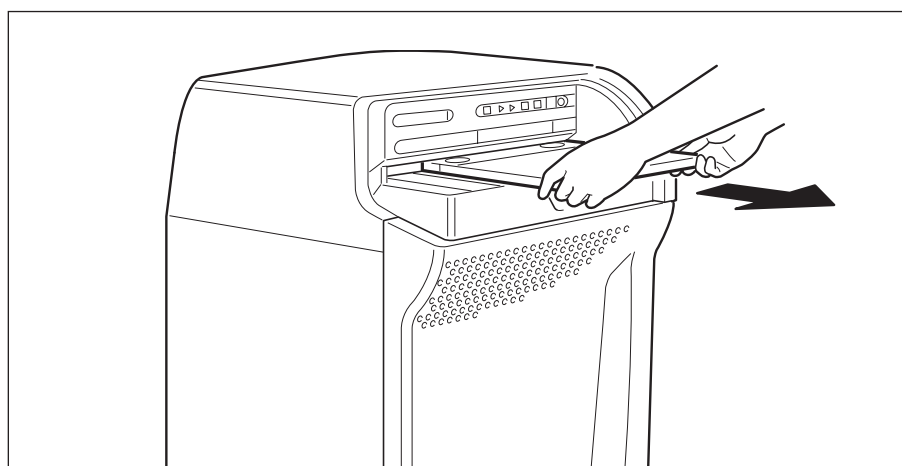
Switching off

Pre-condition:

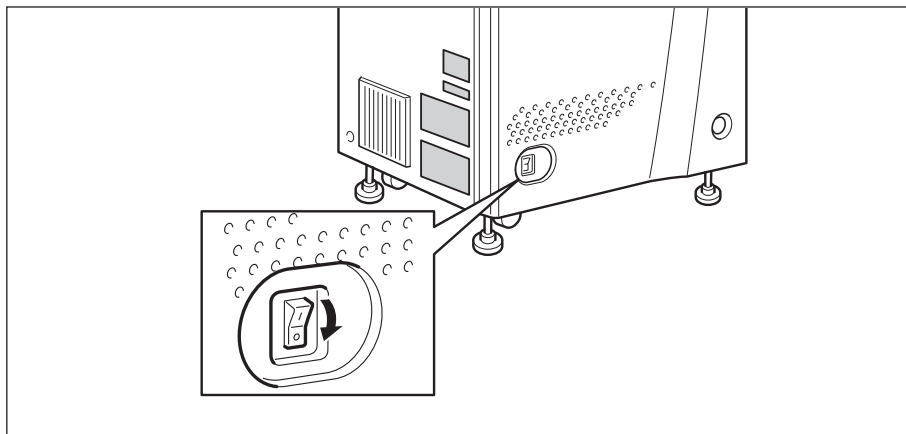
- 1 Processing of the last cassette is complete.
 - The unload lamp lights up.



- 2 Remove the cassette from the cassette compartment.



- 3 Press main switch to the “0” position.



- The PCR Compano is now properly switched off.

5.1.2

Reading out image plates

To read out an image plate you must

- slide the plate cassette into the plate reader,
- have the image plate read out and
- remove the plate cassette again.

Inserting plate cassettes

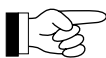
Pre-condition:

The patient has been X-rayed. The exposures can be found on one or more plate cassettes.

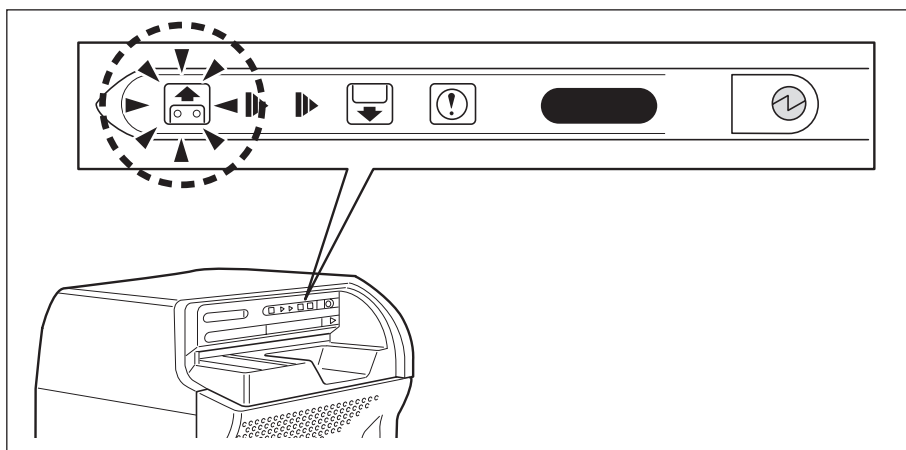
Warning!

Incorrectly inserting the cassette can damage the plate reader. Ensure that the cassette is not inserted upside down, at an angle or incorrectly aligned. If you used exposure marks when making the exposure, remove these from the cassette before inserting it.

- 1 Check that the load lamp is lit on the control panel of the plate reader.



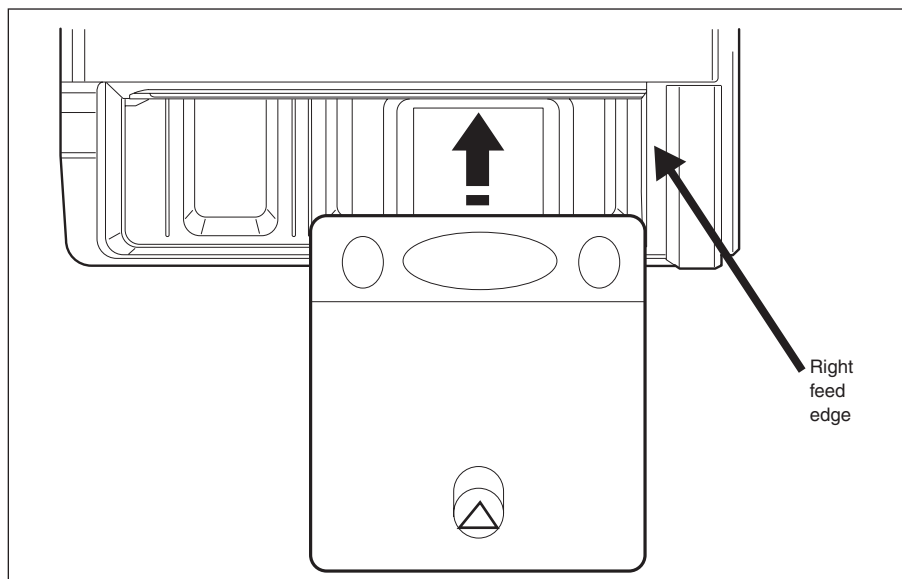
If you are working without a barcode reader the load lamp only appears in the “Examination” section.





If you are working with a barcode reader, you must first of all assign the plate cassette to a view using the operator's console. Otherwise, processing of this plate cassette will be denied. Remove the cassette again and assign the plate cassette to a view using the barcode reader on the operator's console.

- 2 Turn the cassette so that the side to be exposed faces down, and the barcode window goes in first and faces up.



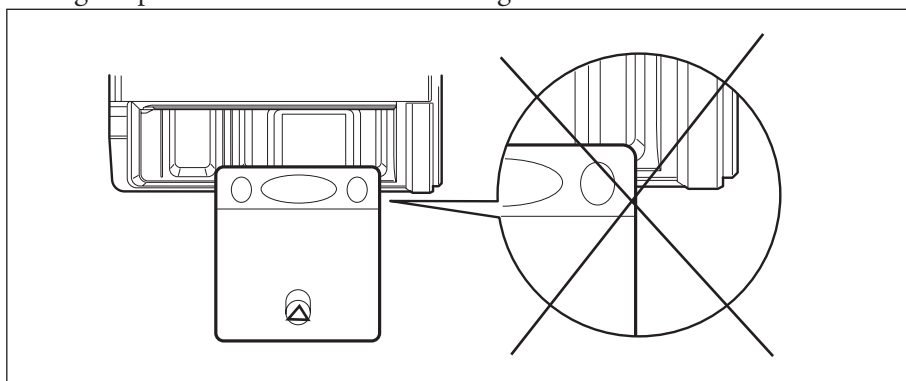
- 3 Slide the cassette into the cassette compartment straight along the right feed edge.

Warning!

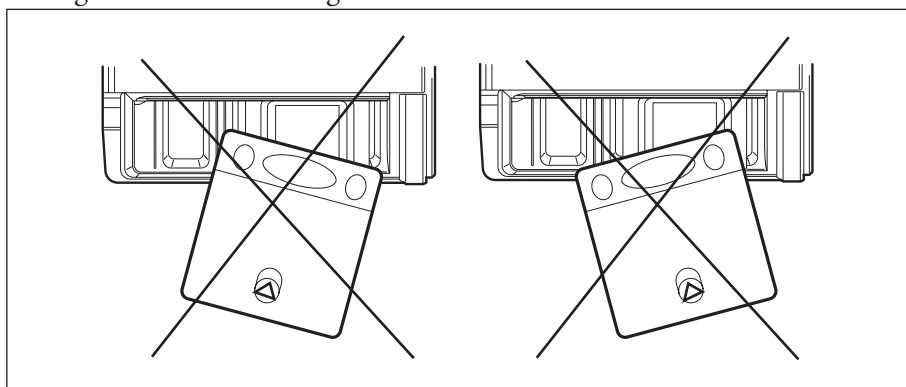
Ensure that you insert the cassette straight and right along the right feed edge.

Never insert the cassette like this:

Wrong! Gap between cassette and feed edge



Wrong! Cassette is at an angle

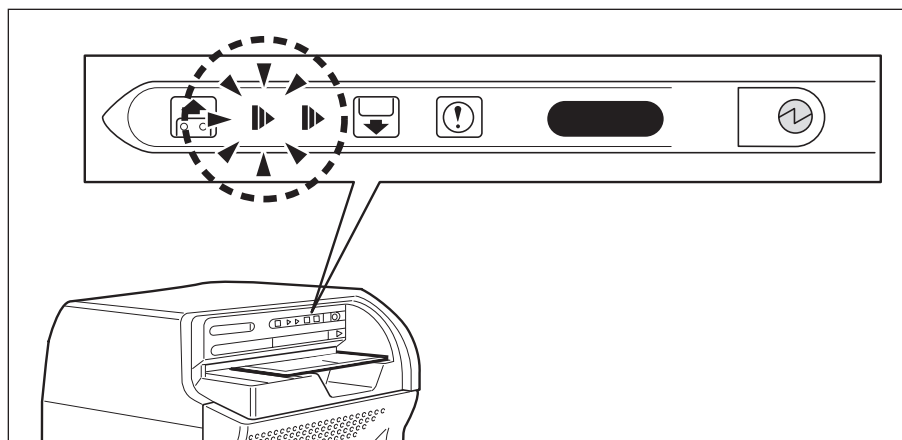


- The cassette slots into place. You will feel slight resistance when inserting the cassette, which you must overcome.
- The load lamp on the control panel of the plate reader goes out. Image plate readout begins automatically.
- The status displays flash on the control panel:
The first arrow flashes during readout. The second arrow flashes when erasure begins until the image plate is reloaded in the cassette.

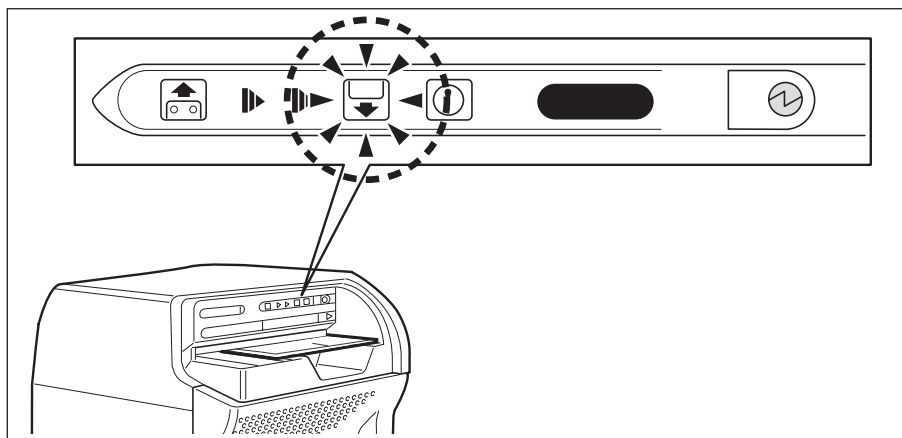
Removing the plate cassette



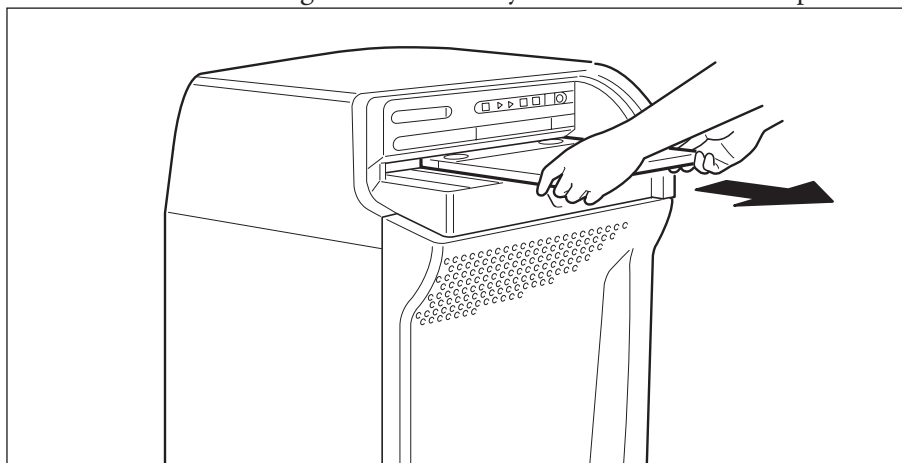
While the image plate is being read out the cassette is locked in the plate reader; the status displays flash.



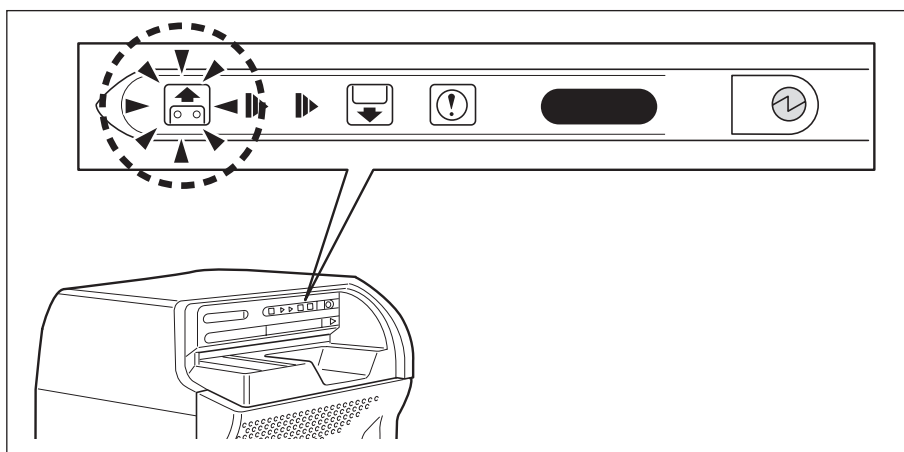
- 4 Check that the unload lamp is lit on the control panel:



- 5 Pull the cassette in a straight line and slowly out of the cassette compartment.



- The unload lamp goes out; the load lamp lights up.



- The cassette is ready for use again.
- The exposure which has been read out is added to the patient's exposures. Unless you have selected another patient or another exposure for processing, the exposure which has been read out appears on the monitor.



If you work with the multiple-console system, the exposure which has been read out is stored and displayed on the console on which you have assigned the plate cassette to a view.



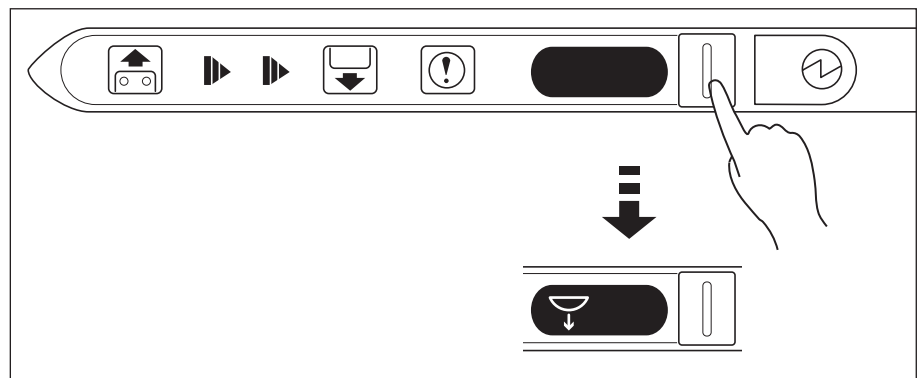
5.1.3 Performing secondary erasure

Normally, the image plates are automatically erased after readout. If, however, an image plate has not been used in the past 8 hours, so-called secondary erasure is necessary. Here, the cassette is merely erased, and not read out.

With time, the image plates absorb natural radiation, with the result that images with low exposure levels have a higher noise component. In applications with a low radiation dose you should therefore perform secondary erasure on the image plate after prolonged storage.

Proceed as follows:

- 1 Press the erase button.
 - The field beside it displays the “secondary erasure” mode for the next cassette to be inserted.



- 2 Insert cassette.

During erasure, the status display for cassette processing flashes. On the monitor, a message concerning the plate reader mode appears above the progress indicator. After erasure, the plate reader automatically switches back into normal read mode, meaning the erasure procedure only ever applies to one cassette.

When the unload lamp lights up, erasure is complete. The cassette can be taken out and used for a new exposure.

5.1.4 Performing primary erasure

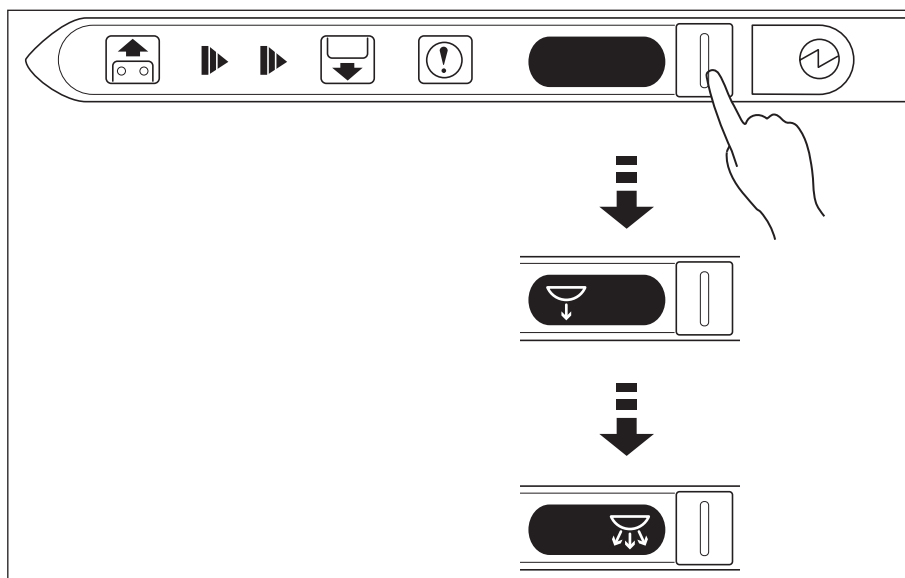
Normally, the image plates are automatically erased after readout. After incorrect exposure, however, special, primary erasure is necessary. Here, the cassette is merely erased, and not read out.



If the plate reader detects an incorrectly exposed image plate, an error message to that effect appears. You may not use incorrectly exposed image plates for around 16 hours after primary erasure.

Proceed as follows:

- 1 Press the erase button twice.
 - The field beside it displays the “primary erasure” mode for the next cassette to be inserted.



2 Insert cassette.

During erasure, the status display for cassette processing flashes. After erasure, the plate reader automatically switches back into normal read mode, meaning the erasure procedure only ever applies to one cassette.

When the unload lamp lights up, erasure is complete. The cassette can be taken out and used for a new exposure.

5.2 The PCR Corado and CosimaX plate readers

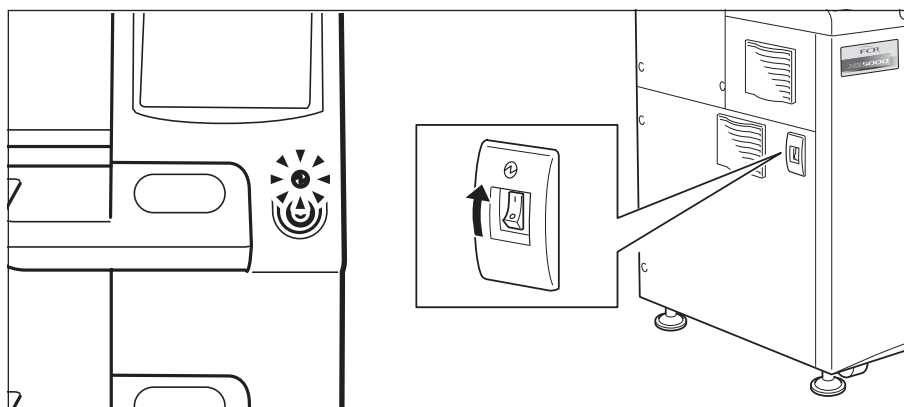
5.2.1 Switching on/off



The plate reader is designed for continuous operation. It is only necessary to switch it off in the event of prolonged stoppages. Do not switch on the plate reader again immediately after switching it off; wait at least 5 s.

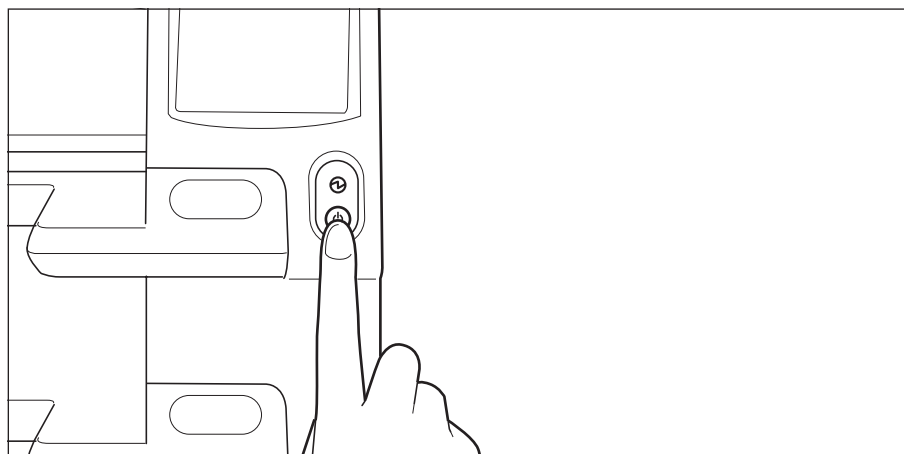
Switching on

The pilot lamp lights up.



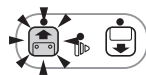
If the pilot lamp does not light up, the main switch may not be switched on. If so, press the main switch to the “I” position (on).

- 1 Switch on the plate reader.



- The operating system loads the programs required and performs a self-test. Various different displays appear.

After the start-up procedure the main window appears:

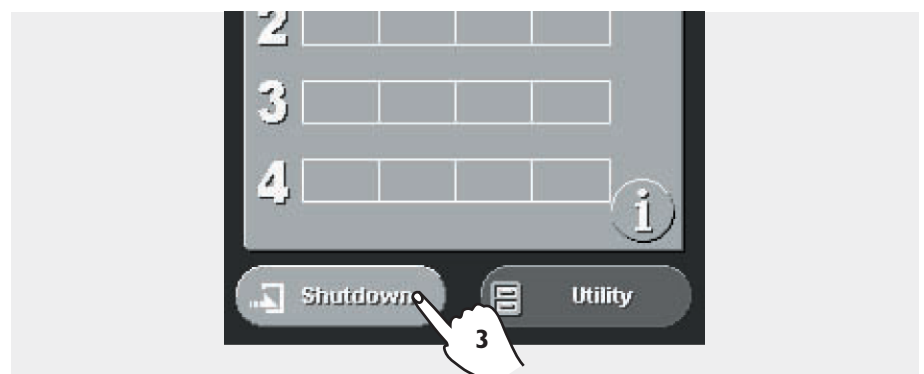


The plate reader is ready when the load lamps of the cassette compartments light up.

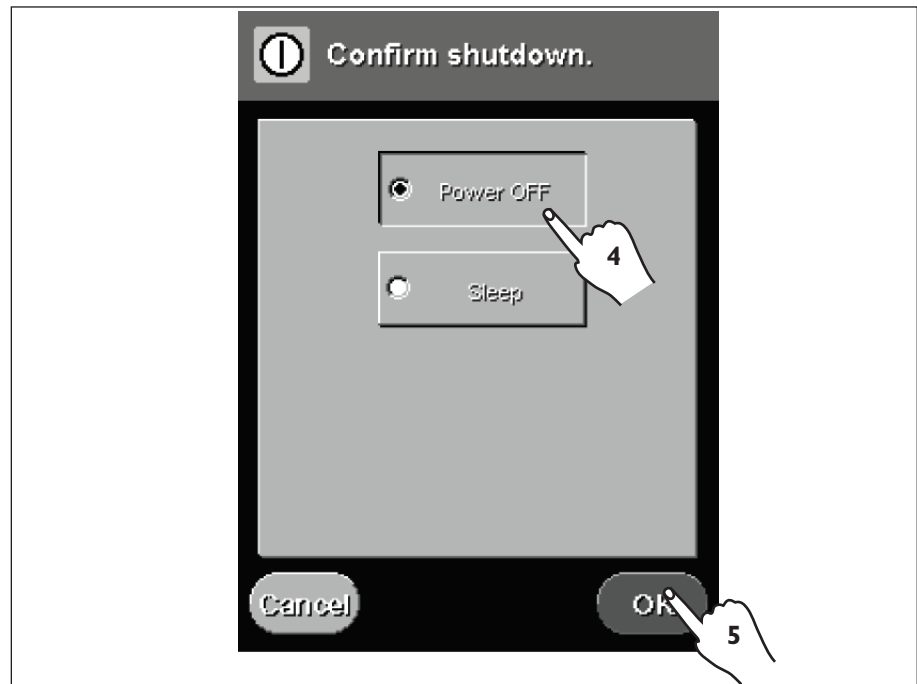
Switching off



- 1 Make sure that processing of all cassettes is complete (unload lamps flashing).
- 2 Remove all cassettes from the cassette compartments.
- 3 Touch the “Shutdown” button in the main window.



- The following confirmation window appears:



- 4 Touch the “Power OFF” button
- 5 and then “OK”.

After a short time the plate reader switches itself off automatically. The main switch can be left turned on.

5.2.2 Reading out image plates

To read out an image plate you must

- slide the plate cassette into the plate reader,
- have the image plate read out and
- remove the plate cassette again.

Inserting the plate cassette

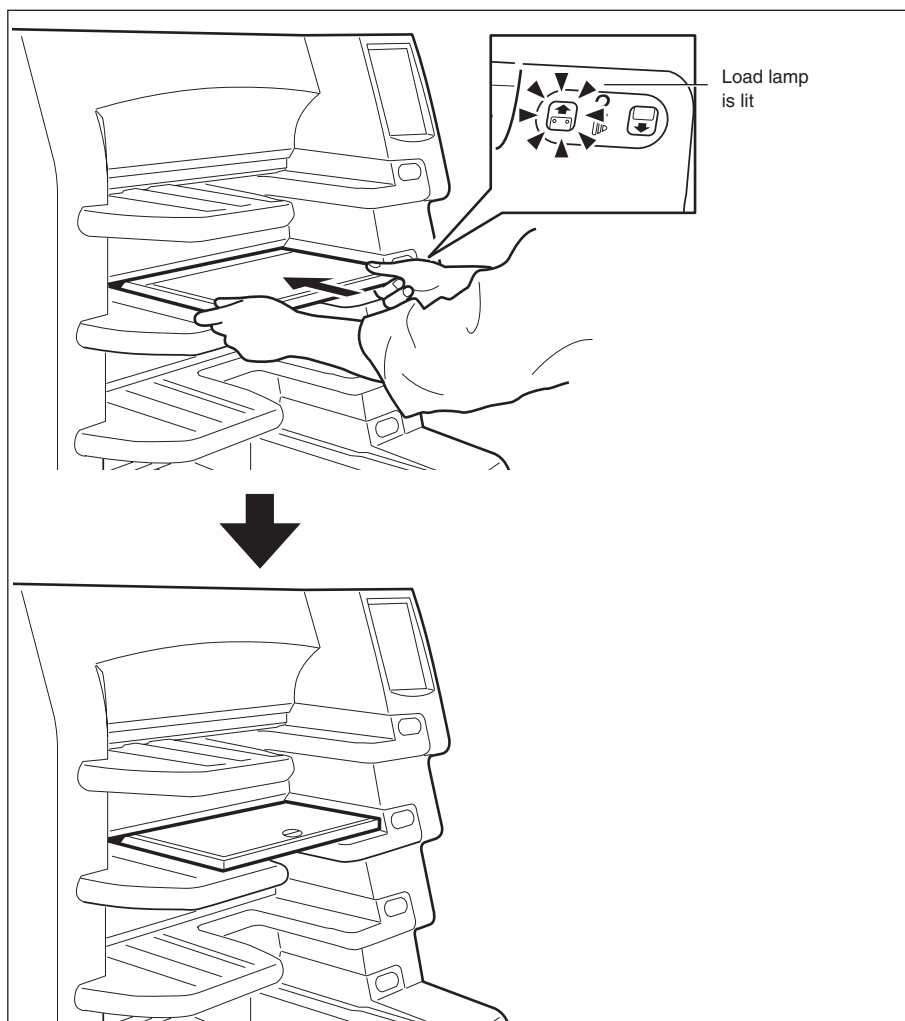
Pre-condition:

The patient has been X-rayed. The exposures can be found on one or more plate cassettes.

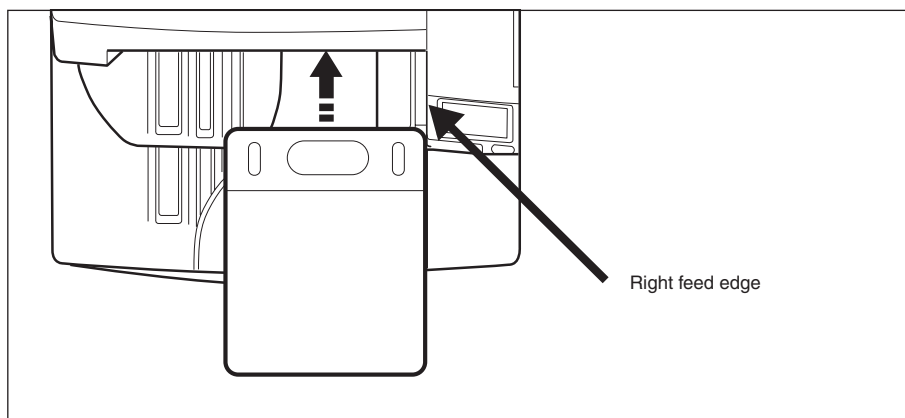
Warning!

Incorrectly inserting the cassette can damage the plate reader. Ensure that the cassette is not inserted upside down, at an angle or incorrectly aligned. If you used exposure marks when making the exposure, remove these from the cassette before inserting it.

- 1 Turn the cassette so that the front faces up (barcode window goes in first and faces up).
- 2 Check that the load lamp of the cassette compartment is lit.
- 3 Place the cassette into the cassette compartment with the front facing up.

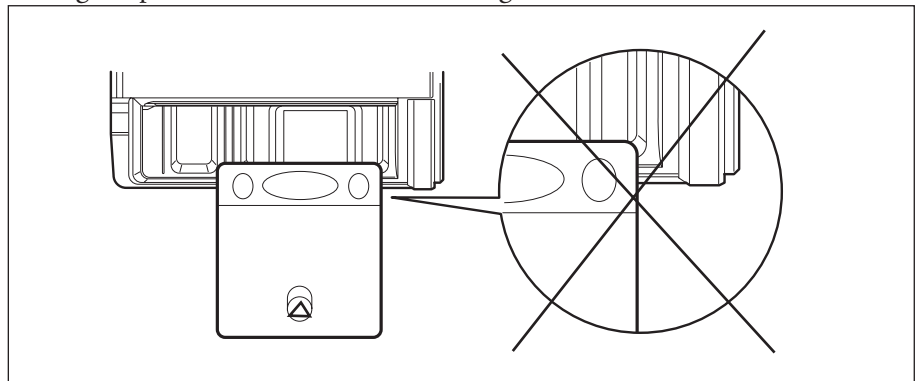


- 4 Guide the cassette along the **right feed edge**, until it slots into the cassette compartment.

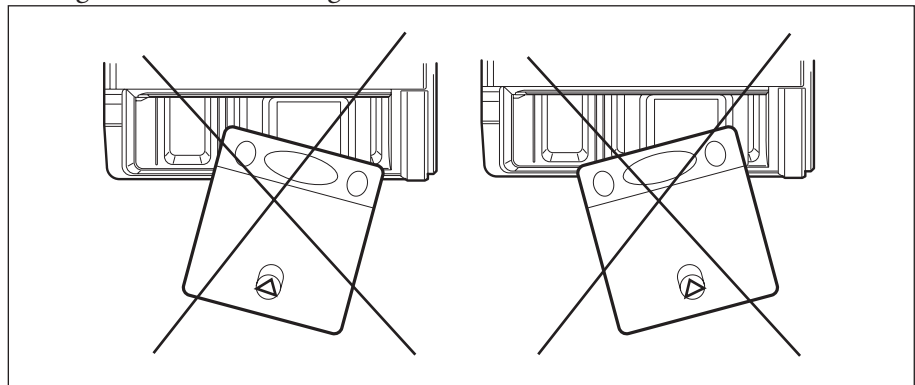


Never insert the cassette like this:

Wrong! Gap between cassette and feed edge



Wrong! Cassette is at an angle



When the cassette correctly slots into the cassette compartment, the load lamp of the cassette compartment goes out and the processing lamp lights up. Image plate readout begins. During this, the cassette is locked and cannot be taken out. The progress of processing is shown on the monitor.

Cassette processing is complete when the unload lamp of the cassette compartment lights up and the processed image is shown in full.

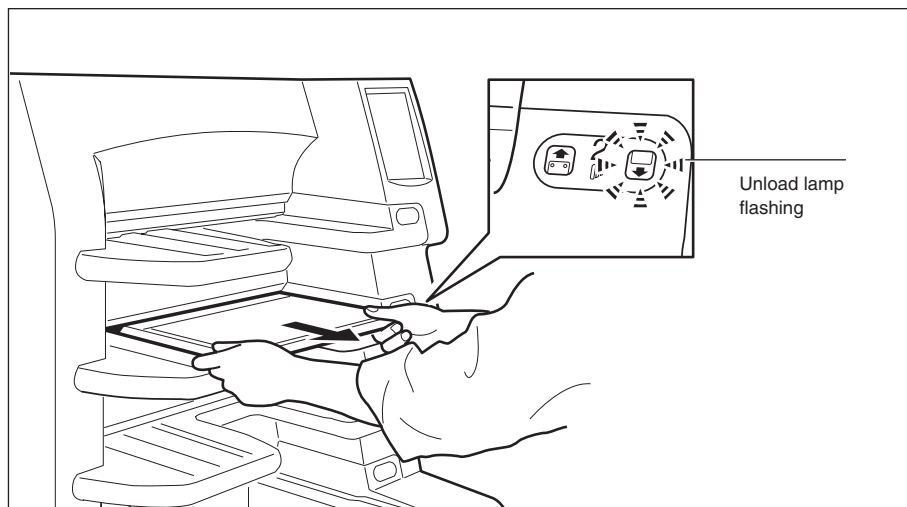


If you are working without a barcode reader the load lamp does not appear until you have selected a view in “Examination”.

Removing the plate cassette



- 1 Check that the blue unload lamp of the cassette compartment is flashing.



- 2 Pull the cassette in a straight line and slowly out of the cassette compartment.
 - The unload lamp goes out; the load lamp lights up.
 - The cassette is ready for use again.
 - The exposure which has been read out is added to the patient's exposures. Unless you have selected another patient or another exposure for processing, the exposure which has been read out appears on the monitor.



If you work with the multiple-console system, the exposure which has been read out is stored and displayed on the console on which you have assigned the plate cassette to a view.



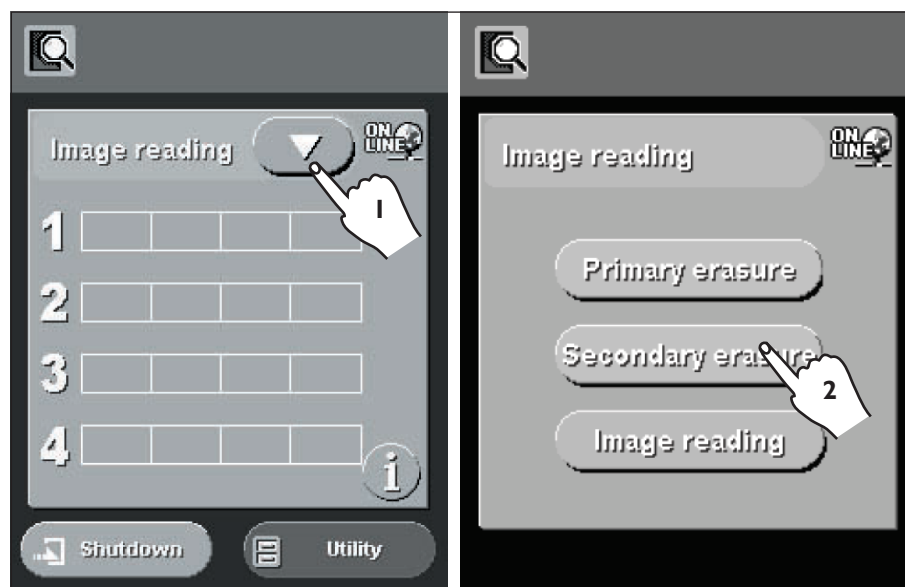
5.2.3 Performing secondary erasure

Normally, the image plates are automatically erased after readout. If, however, an image plate has not been used in the past 8 hours, so-called secondary erasure is necessary. Here, the cassette is merely erased, and not read out.

With time, the image plates absorb natural radiation, with the result that images with low exposure levels have a higher noise component. In applications with a low radiation dose you should therefore perform secondary erasure on the image plate after prolonged storage.

Proceed as follows:

- 1 Select the mode in the main window.
- 2 Select “Secondary erasure”.



The main window appears once again.

The “Secondary erasure” mode is now activated for the next cassette to be inserted. After erasure, the plate reader automatically switches back into normal read mode, meaning the erasure procedure only ever applies to one cassette.



- 3 Insert cassette.
 - During erasure the indicator for the cassette compartment in use flashes.
 - The status of erasure is displayed.
 - When the unload lamp lights up, erasure is complete. The cassette can be taken out and used for a new exposure.

5.2.4

Performing primary erasure

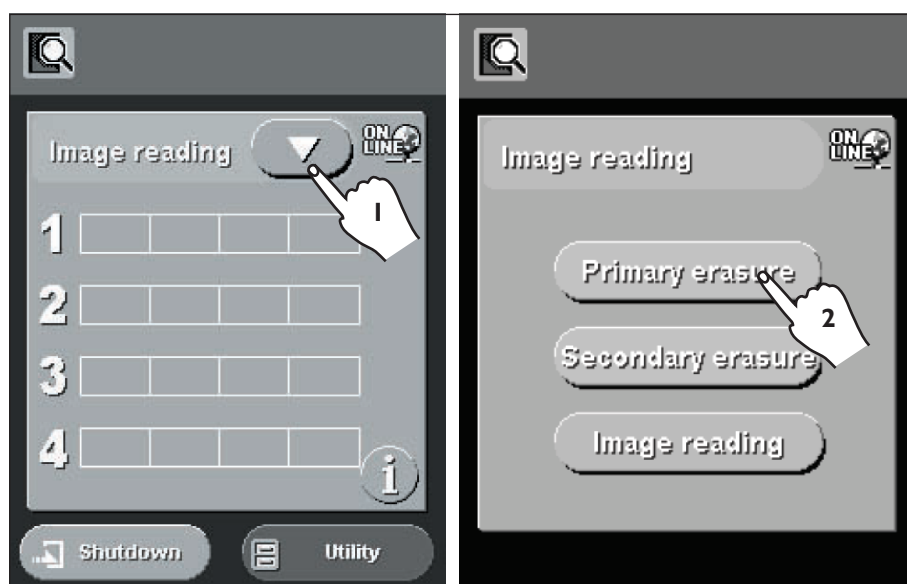
Normally, the image plates are automatically erased after readout. After incorrect exposure, however, special, primary erasure is necessary. Here, the cassette is merely erased, and not read out.



If the plate reader detects an incorrectly exposed image plate, an error message to that effect appears. You may not use incorrectly exposed image plates for around 16 hours after primary erasure.

Proceed as follows:

- 1 Select the mode in the main window.
- 2 Select “Primary erasure”.



The main window appears once again.

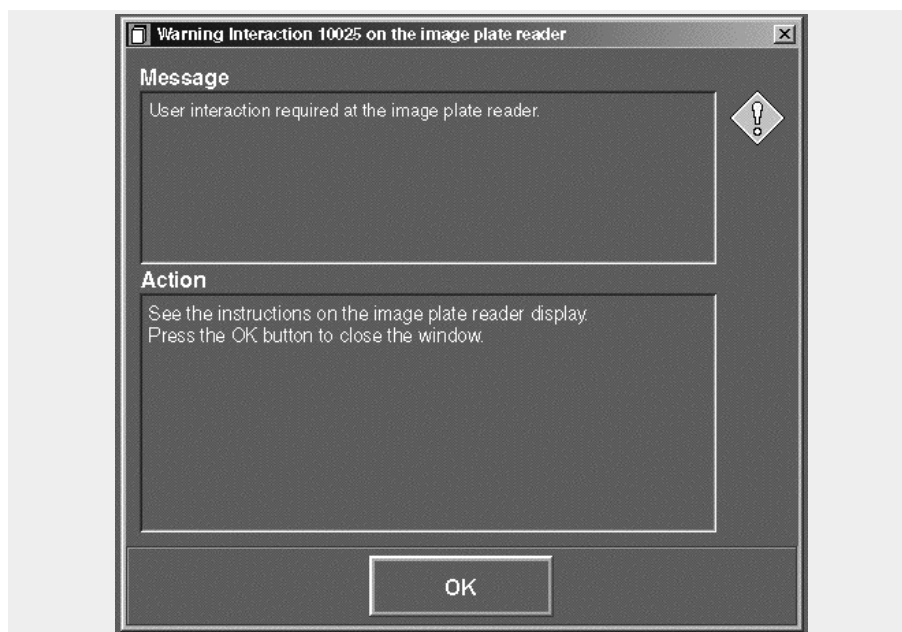
The “Primary erasure” mode is now activated for the next cassette to be inserted. After erasure, the plate reader automatically switches back into normal read mode, meaning the erasure procedure only ever applies to one cassette.

- 3 Insert cassette.
 - During erasure the indicator for the cassette compartment in use flashes.
 - The status of erasure is displayed.
 - When the unload lamp lights up, erasure is complete. The cassette can be taken out and used for a new exposure.



5.2.5 What to do if the cassette is not scanned

If you have forgotten to scan a cassette's barcode before loading it into the plate reader, an error message, stating that the image plate cannot be read out, appears on the monitor, as the plate reader does not have the data for reading out the cassette. At the same time, the following, general error message appears:



- 1 Touch "Stop alarm" on the monitor and confirm unloading of the cassette by pressing "Remove cassette".
 - The error message disappears; the cassette is ejected.
- 2 Remove the cassette and enter the barcode with the corresponding patient and examination data on the PCR terminal.
- 3 Reload the cassette in a free cassette compartment.

5.3 Making exposures

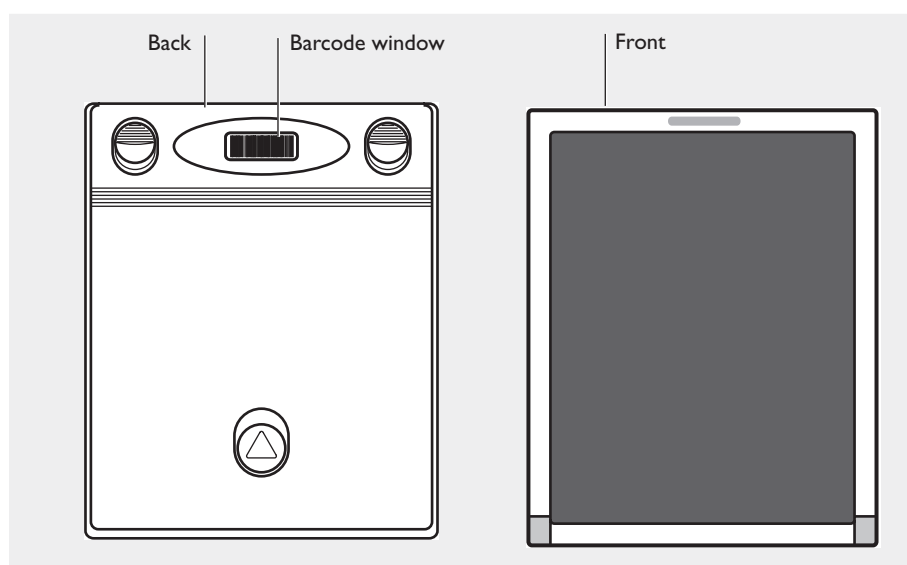
5.3.1 Exposure parameters

For the exposure, use a cassette with an erased image plate and use the same settings on the X-ray generator as with the conventional screen-film technique.

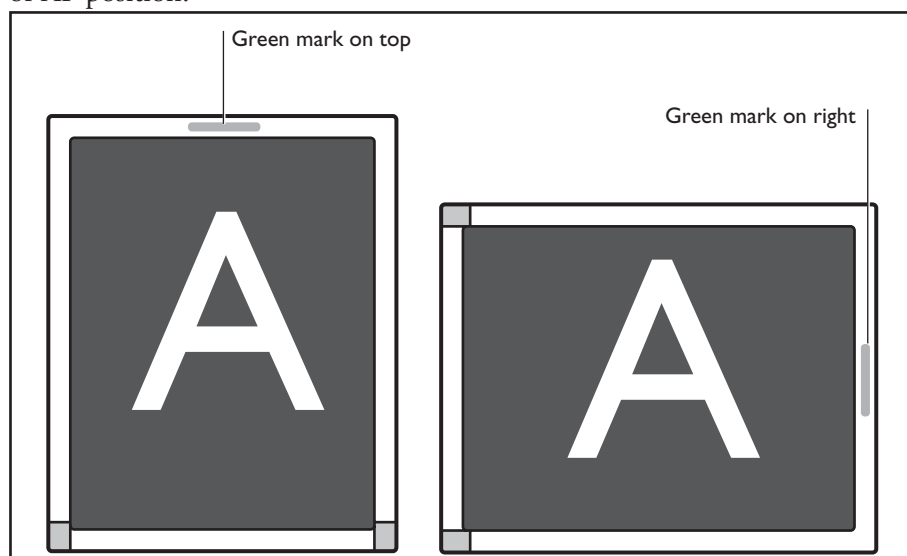
5.3.2 Positioning the cassette

Place the plate cassettes into the cassette tray of the X-ray unit or for free exposures as follows:

- 1 Have the front of the cassette facing towards the source of radiation.



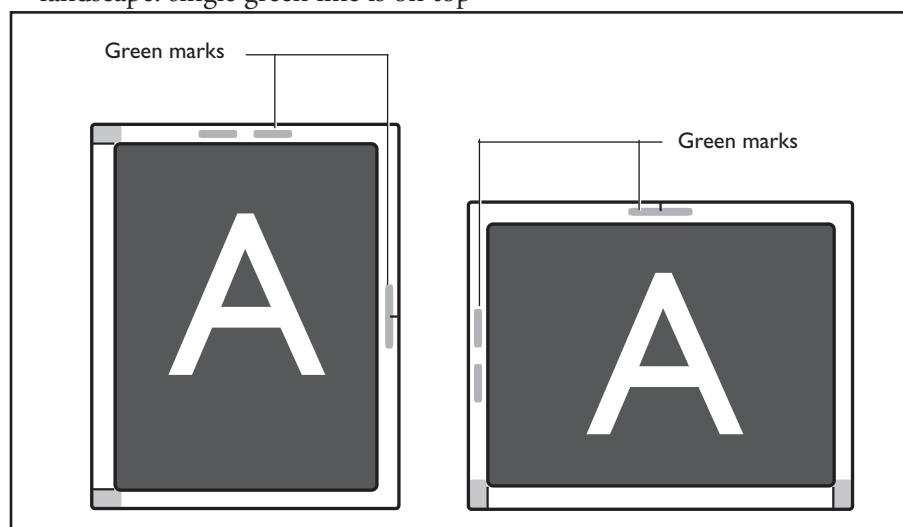
- 2 For exposure, align the cassette so that the green mark on the front is at the top or to the right. It does not matter whether the patient is lying in the PA or AP position.



18 cm x 24 cm format

Cassettes in 18 cm x 24 cm format have two green marks on the side to be exposed. Align these cassettes as follows: for

- portrait: two green marks are on top
- landscape: single green line is on top



5.4 Handling cassettes and image plates



DANGER!

The cassettes may be physically damaged by careless handling. This can lead to disruptions or the failure of the entire system. Image plate soiling can greatly impair its function and, with that, image quality. Always handle cassettes and image plates gently; clean the image plate regularly. Observe the following instructions at all times.

5.4.1 Handling cassettes and image plates

Handle cassettes and image plates as carefully as possible and avoid unnecessary physical wear and tear.

Physical wear and tear

Ensure that the cassette is not damaged when inserting and removing it. Do not drop the cassette on the floor, as this could scratch it.

Wear gloves when removing the image plate from the cassette to prevent your fingernails from scratching it.

Image plates must not be bent, banged or otherwise subjected to rough treatment. Do not use damaged image plates.

Dust and dirt

Always keep the surface of the image plates free from dust and dirt, to prevent faults or inferior image quality.

Do not place plate cassettes on the floor with the opening facing down. Otherwise, dirt can get into the cracks of the plate cassette, which soils the plate reader during readout.

Storing image plates

Observe the following ambient conditions for storage:

- In the sealed packaging: <35°C
- In the opened packaging: <33°C, <80% rel. humidity.



Store image plates so that they are not exposed to direct sunlight or other sources of radiation.

Store image plates vertically or horizontally on a flat surface and do not bend or subject them to other forms of physical wear and tear.

Transport conditions

Do not drop boxes of image plates. Do not throw the boxes. Ensure that the boxes do not come into contact with moisture and are not overheated (above 45°C).

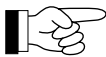
Cleaning image plates: see chap. 12.3.2.

5.5 Notes on radiography

The following outlines what you must pay attention to when exposing image plates and when selecting plate reader modes (readout modes).

Radiography techniques with the following are described here

- UNIQUE (UNified Image QUality Enhancement)
- UM (Unsharp Masking) and DRR (Dynamic Range Reconstruction).
You will find more information on UM and DRR in the appendix.



Warning!

If an image plate has not been used in the past 8 hours, it must undergo secondary erasure before being used again in order to erase the natural radiation absorbed in the interim.

If, despite having followed all exposure instructions, defects arise in the image, please inform Philips Service Organization. Inferior image quality or defects in the images may be caused by the specific scattered radiation of your X-ray unit or use of the beam limitation system.

Exposure parameters and image quality

In general, you expose image plates using the same exposure parameters as conventional screen-film systems. In contrast to conventional systems, however, when the exposure parameters are changed the image plate reacts differently, as the table below shows:

Exposure parameters		Image plate	Screen-film systems
Radiation dose (mAs)	High	Uniform, no visible grain	Density too high
	Low	Uniform, fine grain	Density too low
Tube voltage (kV)	High	No significant change in overall contrast	Reduced contrast
	Low	No significant change in overall contrast	High contrast

In the case of image plates, a change in the radiation dose does not vary the density, but the graininess. Nevertheless, it is still possible, as before, to influence image quality by adjusting the exposure parameters.

With automatic exposure control uniform density is achieved with conventional screen-film systems, and almost uniform graininess in the case of image plates.

Using Bucky equipment and stationary grids

With Bucky exposures, ensure that the grid is not aligned parallel to the cassette hinges. Do not use coarse grids in conjunction with the high-resolution working mode, otherwise artifacts occur more easily in the image display.

5.5.1 Notes on radiography techniques with UNIQUE

- Only one exposure per cassette is possible.
- Rotating the image will not rotate the measuring field.

6 The operator's console

This chapter tells you

- what the operator's console can do,
- how to use the operator's console
- what sections are on the operator's console and
- how the sections on the operator's console are structured.



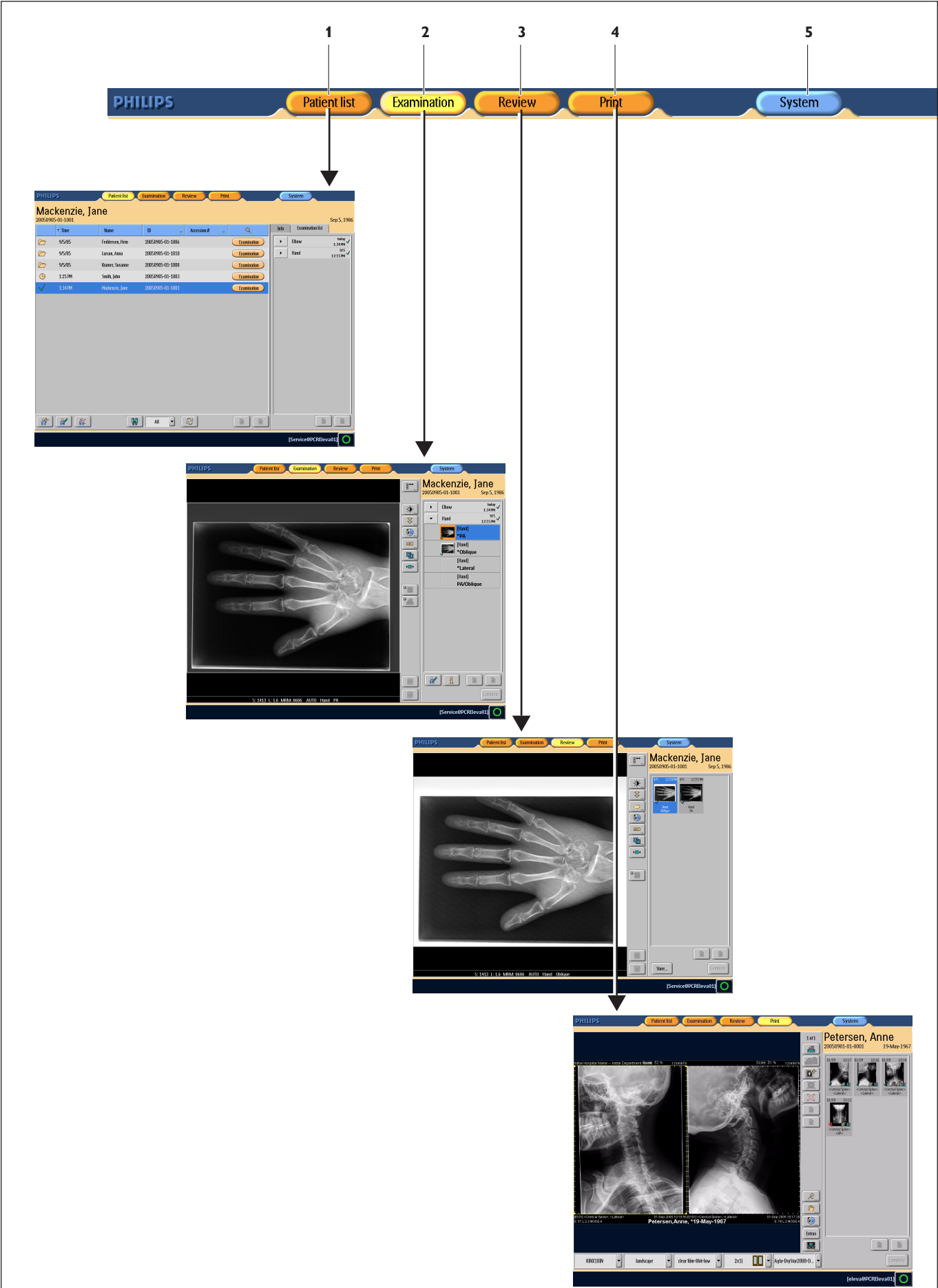
6.1 What the operator's console can do

You can control examination data from the scheduling stage through to the end of examination, i.e. enter patient data and examination data, read in, process, print and save images.

The operator's console has 5 sections:

- Patient list
- Examination
- Review
- Print
- System

Overview of the sections



You can select the different sections using the main selector buttons (**1-5**). When a section is selected the button for it turns yellow.

The different sections mean the following:

Number	Function	Meaning
1	Patient list	Here you can enter patient data or select it from a list provided by RIS. You can assign types of examination to the patient or use the examination types from RIS. If a patient has been selected in the Patient list section, this selection is retained when you go into the other three sections (buttons 2, 3, 4).
2	Examination	Here you can <ul style="list-style-type: none"> - control the examination, - assign plate cassettes, - observe reading by the plate reader, - edit the images if necessary.
3	Review	Here you will find <ul style="list-style-type: none"> - advanced image processing tools for checking image quality, for processing images and for saving to an archive, - an overview of the patient's images.
4	Print	You will find the printing tools here. You can print one or more images on a film, and determine the image size and image field.
5	System	Here you can exit the application program and log out. For the system manager only: Setting administration and configuration functions.

6.2 How to use the operator's console

The system is designed for operation via a touch screen, i.e. you “press” a button by touching the screen at that point.

6.2.1 Selecting the section



When you click on one of the 5 buttons, the corresponding section appears.

6.2.2 Scrolling through lists

Below a list you often find the following two scroll buttons.



By clicking on these buttons you can scroll

- up (1) or
- down (2) through lists.

6.2.3 Operating the slide controls

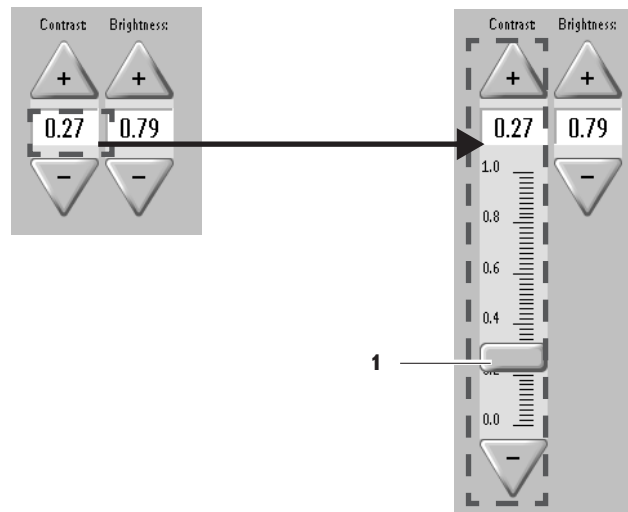
You will often find slide controls for setting numerical values, e.g. in the image processing tools. You can change the values by clicking on the + and - buttons:



- to increase the value,
- to reduce the value.

You open the slide control by clicking on the white area containing the numerical value. Then you can change the value by moving the control (1).

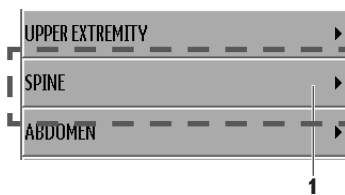
To close the slide control: click on the white area again.



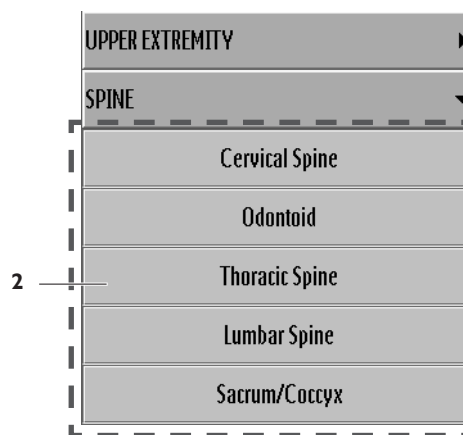
6.2.4

Operating drop-down lists

Some lists drop down for selection. The example shows the list of body regions under patient and examination scheduling.



- 1 Click on the button with the small black arrow (1).
 - The hidden selection list (2) appears.



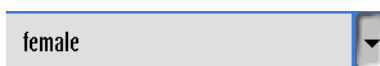
Thoracic Spine

- 2 You can make a selection from the drop-down list by clicking on it. The background of the selected field turns blue.

6.2.5

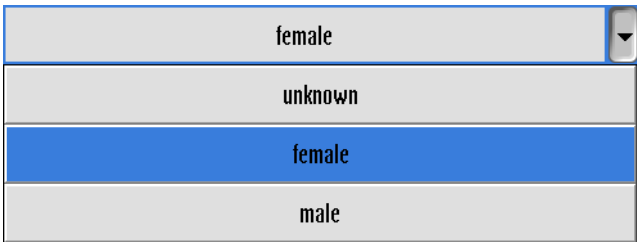
Operating the selection fields

You can often select a certain value from a preset list of values. Shown by way of example is the selection field "Sex" under patient and examination scheduling. You can select the value as follows:



- 1 Click on the arrow.

- The selection drops down and shows the possible values.





- 2 Click on the value you want.
 - The selected value is then displayed.

6.2.6 Operating switches

You can change some functions using a switch. The example shows the “AutoSave” switch.

You can tell the status of the switch by the LED on the symbol:

-  LED is green: function is activated.
-  LED is gray: function is deactivated.

Turning a function on/off:



- 1 Click on the switch.

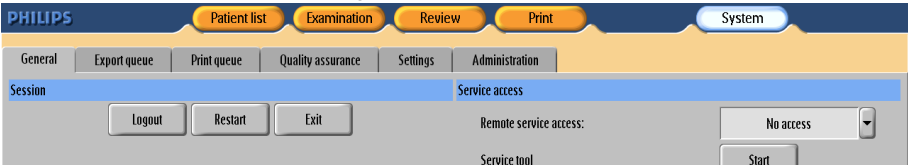
6.2.7 Setting the on-screen keyboard

For the system manager only: when entering text in text boxes you have the option of calling up a virtual semi-transparent keyboard on-screen, so that you can also enter text directly on the screen.

You can either turn off this function, or set it so that

- the keyboard always appears when the cursor is in a text box,
- you can call up the keyboard via a symbol at the end of the text box once the cursor is in a text box.

- System 1 Click on System; the following appears



Settings 2 Click on Settings; the following appears

The screenshot shows the Philips operator's console interface with the 'Settings' tab selected. The 'Settings' tab is highlighted in the top navigation bar. Below it, the 'Workflow' section is expanded, showing options for 'Patient list type' (Date), 'Use barcode reader' (Yes), and 'Image confirmation' (Yes). The 'Examination list' section shows 'Show text on examination button' (No) and 'Examination sorting' (Newest on top). The 'Image display' section shows 'Shutter border width' (0) and 'Zoom image to shutters' (Yes). The 'Virtual keyboard' section shows 'Use virtual keyboard' (No). The bottom status bar displays '[Service@PCREleva01]' and a green status indicator.

- The following appears under “Virtual keyboard”

The screenshot shows a dialog box titled 'Use virtual keyboard'. It contains a dropdown menu with four options: 'Always', 'No', 'Always', and 'On request'. The 'Always' option is currently selected and highlighted in blue.

3 Select the display you want.

Depending on your selection, the on-screen keyboard then appears (example)

The screenshot shows the Philips operator's console interface with the 'Patient' and 'Study' sections. The 'Study' section is expanded, showing a list of examinations. An on-screen keyboard is displayed over the 'Study' section, allowing for text entry. The keyboard includes standard alphanumeric keys, function keys like 'ESC', 'Tab', 'Caps Lock', 'Shift', and 'Enter', and a 'Reset' button. The bottom status bar displays 'OK' and 'Cancel' buttons.



You can

- hide



- show the keyboard, or



- move it to
 - the top



- the bottom



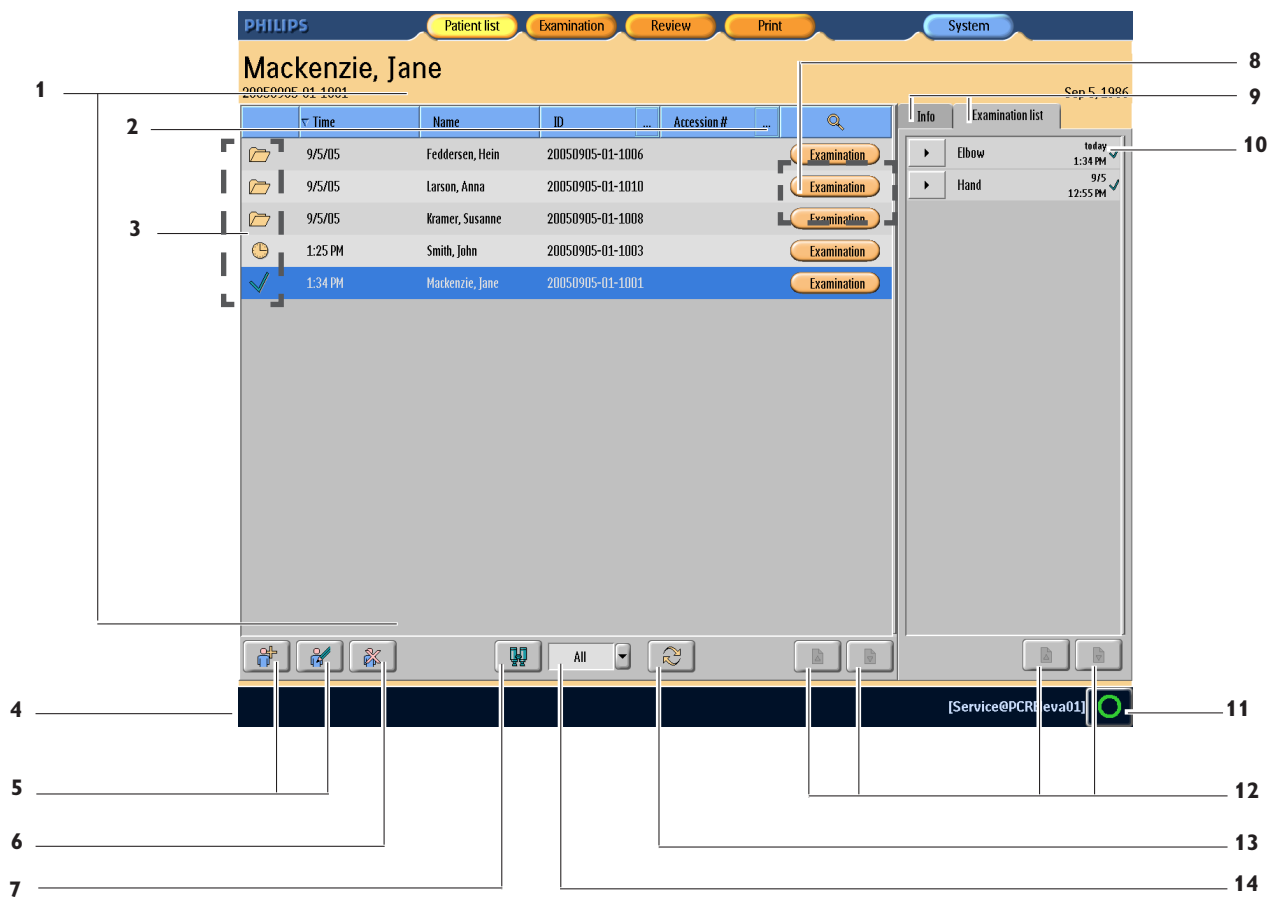
- or the center.







7 Patient administration

The first section is Patient list. This displays the patient data, studies and examinations stored in the system. You can filter and sort the list by examination status or other patient attributes.

You can only select a new patient / a new study here, which you can then use in the Examination, Review and Print sections.

You can add, change and delete patient data via the buttons **5** and **6**.

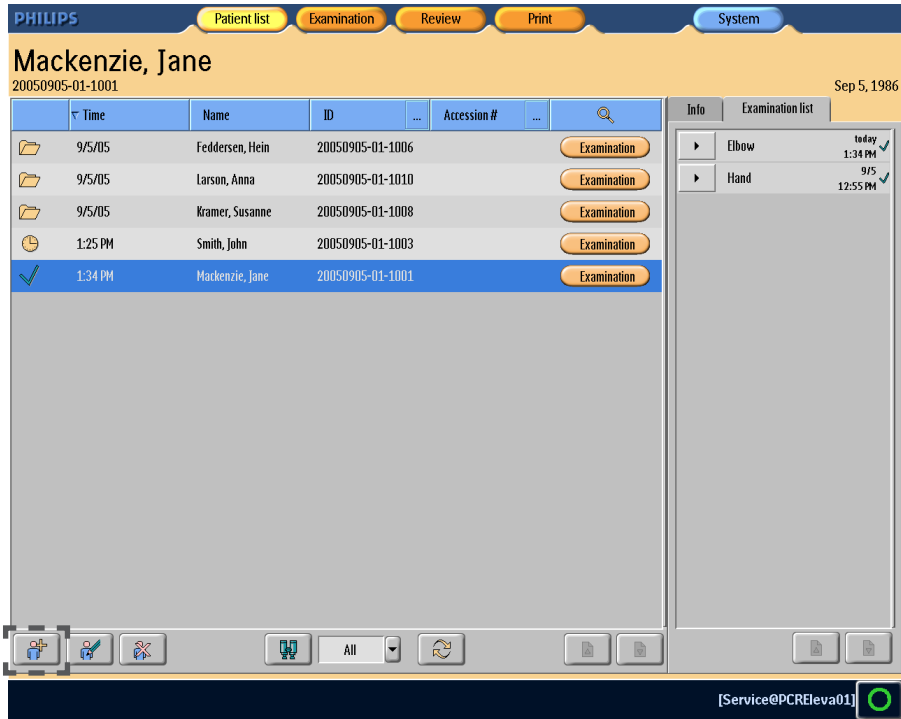


Number	Meaning
1	Patient list
2	Columns in patient list are interchangeable: Alternate between Patient ID, date of birth and other functions
3	<p>Patient status:</p> <ul style="list-style-type: none">  "Patient scheduled"  "Patient in progress"  "Patient completed"  A problem has occurred, e.g. export or print failed  "Completing patient"
4	Name of the logged-on user (optional)
5	Add / edit patient. These buttons take you to the "Patient and Examination Scheduling" section.
6	Delete patient list entry
7	Find patient in the database
8	Select a patient for examination, call up the Examination section
9	Switch between examination list and patient information for the selected patient
10	Examination folder and data for the selected patient
11	System status display (green / yellow / red)
12	Scroll through patient / examination lists (scroll buttons)
13	Updating the worklist with data from RIS
14	<p>Filter for the patient list, e.g. filter for special worklists (all patients are selected in the example):</p> 

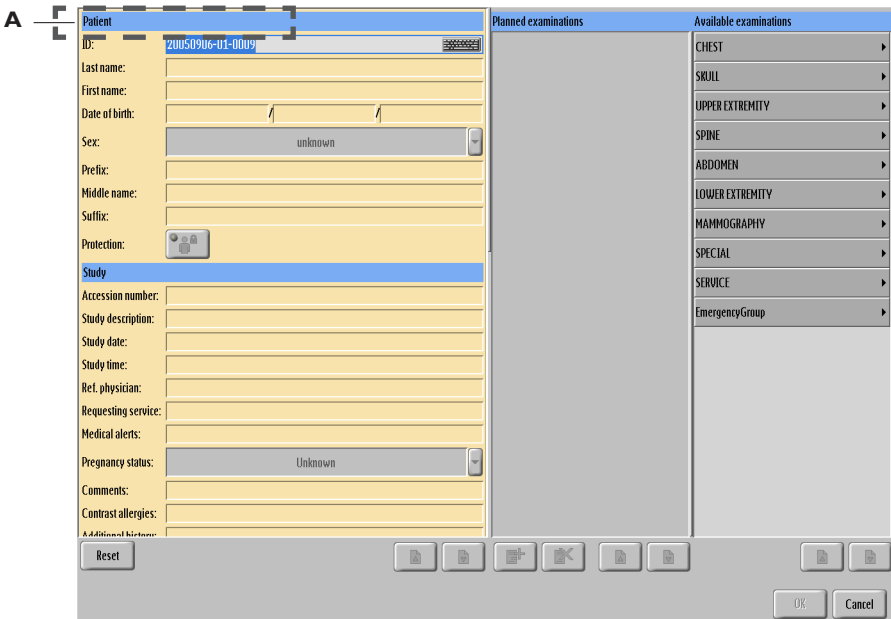
7.1 Entering patient and examination data

7.1.1 Entering patient data

You are in the Patient list section.



- 1 Add a patient.
 - Patient and Examination Scheduling appears.
 - The patient ID (A) is automatically assigned, and can be overwritten.



- 2 Press Enter.
 - Now the field “Last name” is active.

- 3 Enter the patient's last name.
If you work with a touch screen, the on-screen keyboard appears on the screen – if so configured.
- 4 Press Enter.
 - This will automatically take you to the next field.



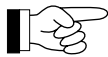
Philips recommends entering the following data:

- **Last name,**
- **First name,**
- **Date of birth,**
- **Sex.**

- 5 Click on the relevant field.
 - The field is active.
- 6 Enter data.
If you work with a touch screen, the on-screen keyboard appears on the screen – if so configured.
- 7 If required, enter further patient and examination data
- 8 Continue with the next chapter
or

OK

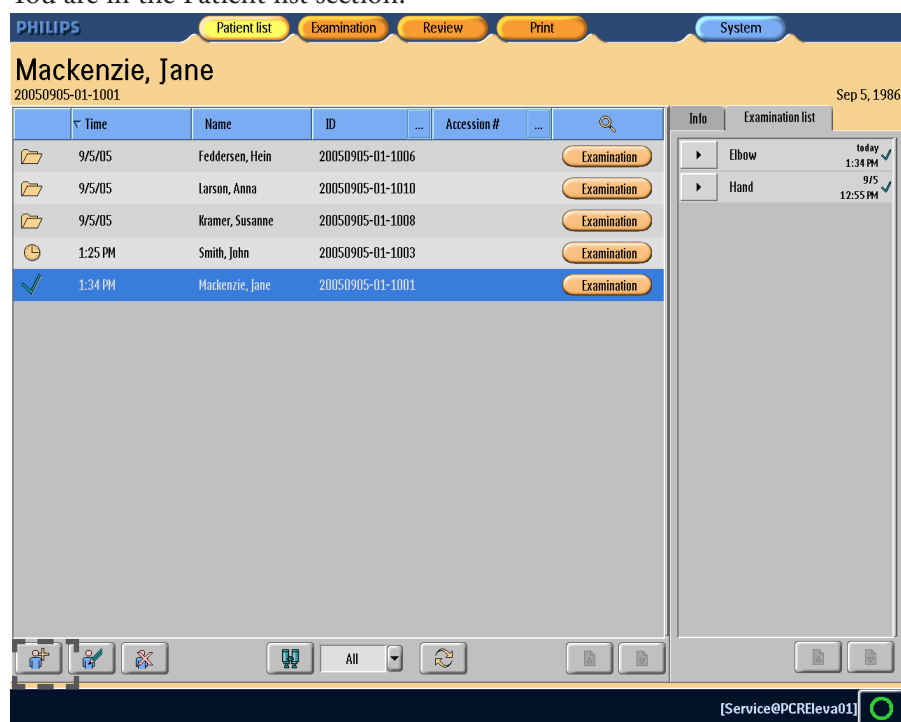
Confirm patient entry.



If the patient's name is not configured as an additional identifier in the system, the system will file the images under the most recent patient name with the same patient ID as a previous entry.

7.1.2 Adding a study

You are in the Patient list section.



When you add a new patient a new study is also created automatically. If you want to create further studies for a patient, proceed as follows:

- 1 Select patient.



- 2 Select "Change data".

- Patient and Examination Scheduling appears.



- 3 Add a study.

- In Patient and Examination Scheduling a new study appears in the column "Planned examinations". You can now enter examination types here – as described in the next chapter.

Unless the function is disabled, you can add any examination types to any studies.

7.1.3 Adding examination types

You are in Patient and Examination Scheduling; new patient data has already been entered.

UPPER EXTREMITY

- 1 Select body region (A).
 - A list of the possible types of examination appears (B).

Hand

- 2 Select type of examination.
 - The type of examination is added to the list of planned types of examination (C).



- 3 Continue with step 1 if you want to assign more than one type of examination to the patient
or

OK

- Confirm examination type entry.
- The type of examination is scheduled for the patient.
 - The Patient list appears.

7.1.4 Deleting a study

You can only delete a study if none of the assigned examinations have been started.

- 1 Select study.
- 2 Delete study.
 - In Patient and Examination Scheduling the study is deleted from the column "Planned examinations".



7.1.5
Deleting examination types

You are in Patient and Examination Scheduling.
 New patient data has already been entered; examination types have been added.

Patient	Planned examinations	Available examinations
ID: 20050905-01-1003	Scoliosis 9/5 2:48 PM	CHEST
Last name: Smith	Nasal Bones today 1:25 PM	SKULL
First name: John	Scoliosis today 5:10 PM	UPPER EXTREMITY
Date of birth: 2 / 10 / 1934	hand today 5:21 PM	Hand
Sex: male		Ped Hand <3 yr
Prefix:		Finger
Middle name:		Wrist
Suffix:		Forearm
Protection:		Elbow
Study		Humerus
Accession number:		Ped Arm <3 yr
Study description: Scoliosis		Shoulder
Study date: Sep 5, 2005		Clavicle
Study time: 2:48:03 PM		Scapula
Ref. physician:		AC Joints
Requesting service:		Shoulder Arthro
Medical alerts:		Wrist Arthro
Pregnancy status: Unknown		
Comments:		
Contrast allergies:		
Additional history:		



- 1 Select type of examination.
 - The background of the examination type turns blue.
- 2 Delete type of examination.
 - The examination type is deleted from the list of planned examinations.



You can only delete a type of examination if you have neither assigned plate cassettes to that type of examination nor read out and stored exposures under this type of examination.

7.1.6
Customizing the Patient list

You have the option of customizing the Patient list to your personal preferences.

Changing the sequence of the columns

- 1 Click on the top of the column and hold.
- 2 Drag the column in the direction you want; the column changes places with the adjacent one.

Changing sorting

You can change sorting in all columns (numerical, alphabetical or by patient status).

- 1 Click on the top of the column once.
A small arrow beside the text in the top of the column indicates how it is sorted.

Changing column width

- 1 In the top of the column, click on the dividing line between two columns, and hold.
- 2 Drag the line in the direction you want.

Renaming columns

The columns with three dots on the right of the top of the column can be renamed to predefined criteria.

- 1 Click on the dots;
a submenu appears.
- 2 Choose new name.

7.1.7

Finding a patient in the patient list

If the patient list is very long, you can search for a specific patient:



- 1 Open the Find dialog box.

Time	Name	ID	...	Accession #	...		Info	Exa

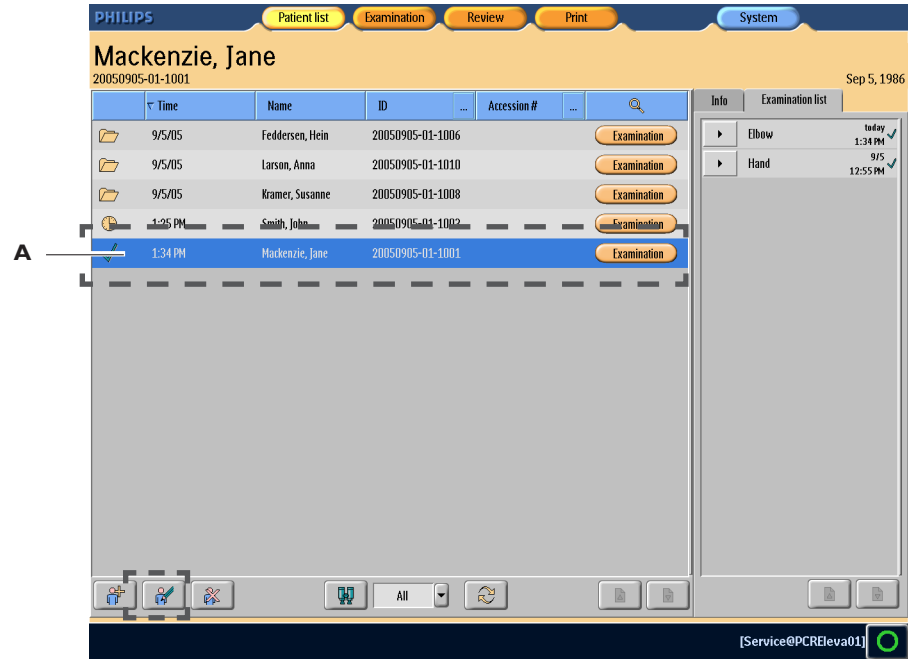
- 2 Enter patient's name or first letters.
- A list of patients matching the search criteria appears:

Time	Name	ID	...	Accession #	...		Info	Exa
	Smith, John	20050905-01-1003				Examination		
9/5/05	Feddersen, Hein	20050905-01-1006				Examination		
9/5/05	Larson, Anna	20050905-01-1010				Examination		

- 3 Select patient name for examination.
- The background of the patient's name turns blue.

7.1.8
Changing patient and examination data

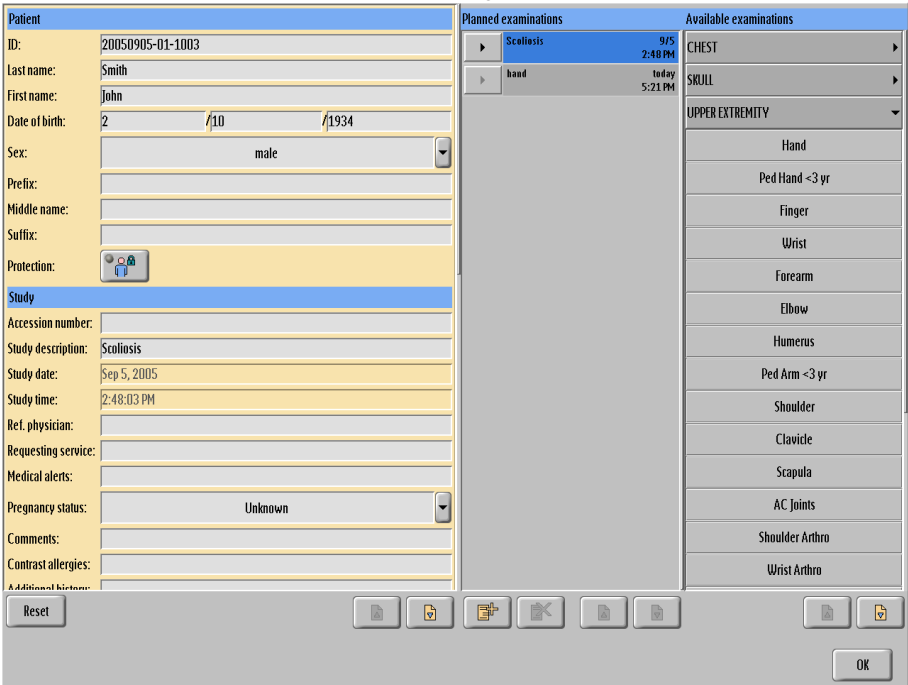
You are in the Patient list section.



- 1 Select patient name (A).
 - The background of the patient's name turns blue.



- 2 Select “Change data”.
 - Patient and Examination Scheduling appears:



- 3 Click on the field you want to edit.
- 4 Change patient and examination data.

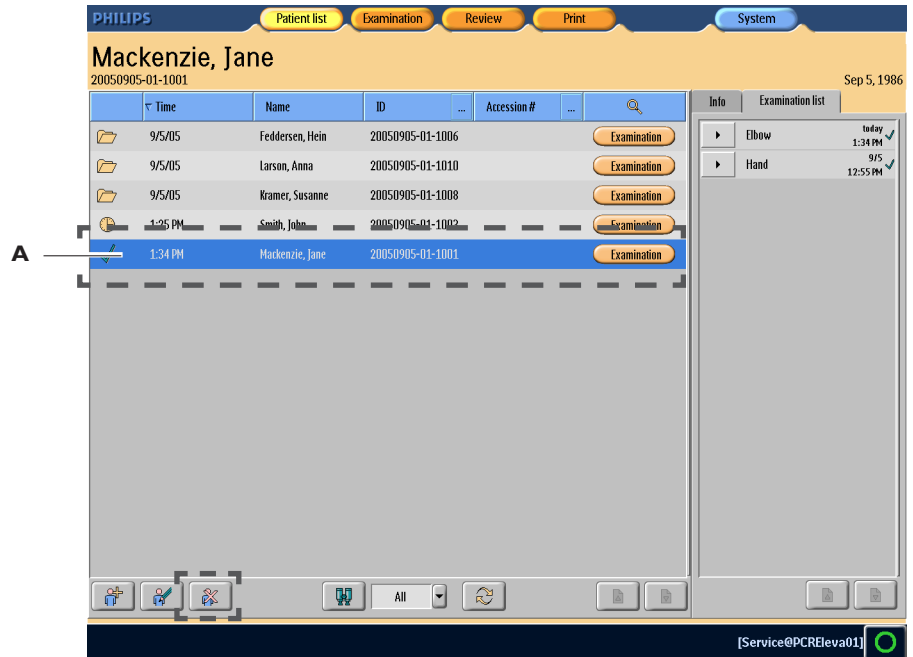
If you work with a touch screen, the on-screen keyboard appears on the screen – if so configured.
- 5 Add new examination types (see chapter 7.1.3).

7.1.9

Deleting a patient's data from the patient list

Protected patient data may only be deleted by the system manager.

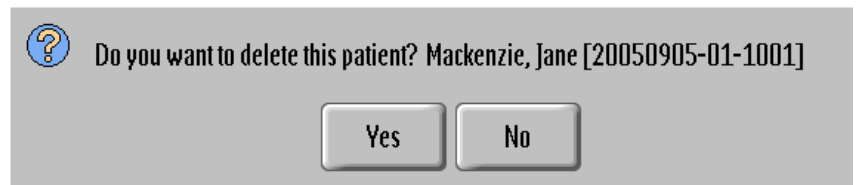
You are in the Patient list section.



- 1 Select patient name (A).
 - The background of the patient's name turns blue.



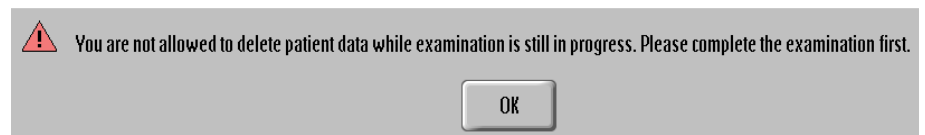
- 2 Delete all data in this line.
 - The following appears




- Yes
- 3 Confirm deletion.



If examination of the patient has not yet been completed, the following appears:



If you nevertheless want to delete the patient from the patient list, proceed as follows:

- | | |
|-------------|--|
| OK | 1 Confirm message. |
| Examination | 2 Select examination. |
| Complete | 3 Close all the patient's assigned examination types and views. <ul style="list-style-type: none"> - In the Patient list, the patient is given the symbol  to indicate completion. If examinations are still outstanding, an hourglass appears. - Delete the patient from the patient list. |

7.2 Getting patient data from RIS

7.2.1 Updating the patient list

You are in the Patient list.



- 1 Start RIS query.
 - The button is blue for as long as the query is in progress.
 - At the same time, new patients' data is added to the list.
 - Existing patient data and examinations are updated, unless they have already begun.
 - Patient data and examinations that are no longer required are deleted.
 - After the query the list is resorted.
 - After the query the patients with planned examinations not included in the response from RIS are deleted and disappear from the list.
- 2 To stop query, if necessary: click on the button again, as long as it is blue.

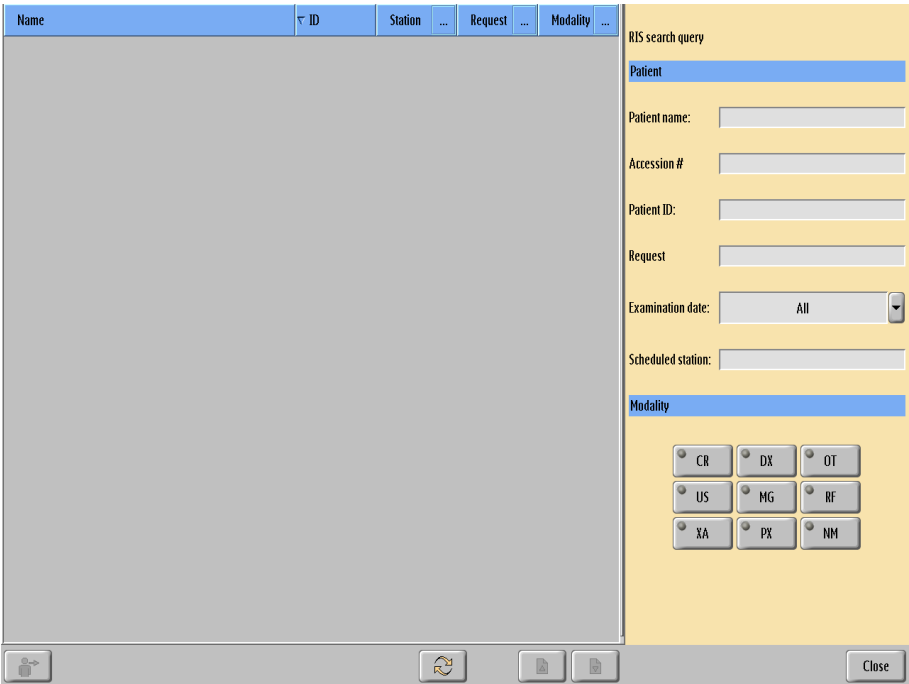
7.2.2

Getting individual examinations from RIS
(only via DICOM RIS)

You can select individual scheduled examinations, offered by the RIS, and transfer them to the PCR system.



- 1
- Start search function.
- The following appears



- On the right you can
- enter one or more criteria to precisely narrow down your search,
 - enter wild card criteria using “*” to narrow down your search,
 - choose from a list of modalities.



- 2
- Start RIS query.
- The button is blue for as long as the query is in progress.
 - At the same time, all examinations matching your criteria appear.
- To stop query, if necessary: click on the button again, as long as it is blue.

- 3
- Select the examination(s) you want.



- 4
- Add examination(s) to the patient list.

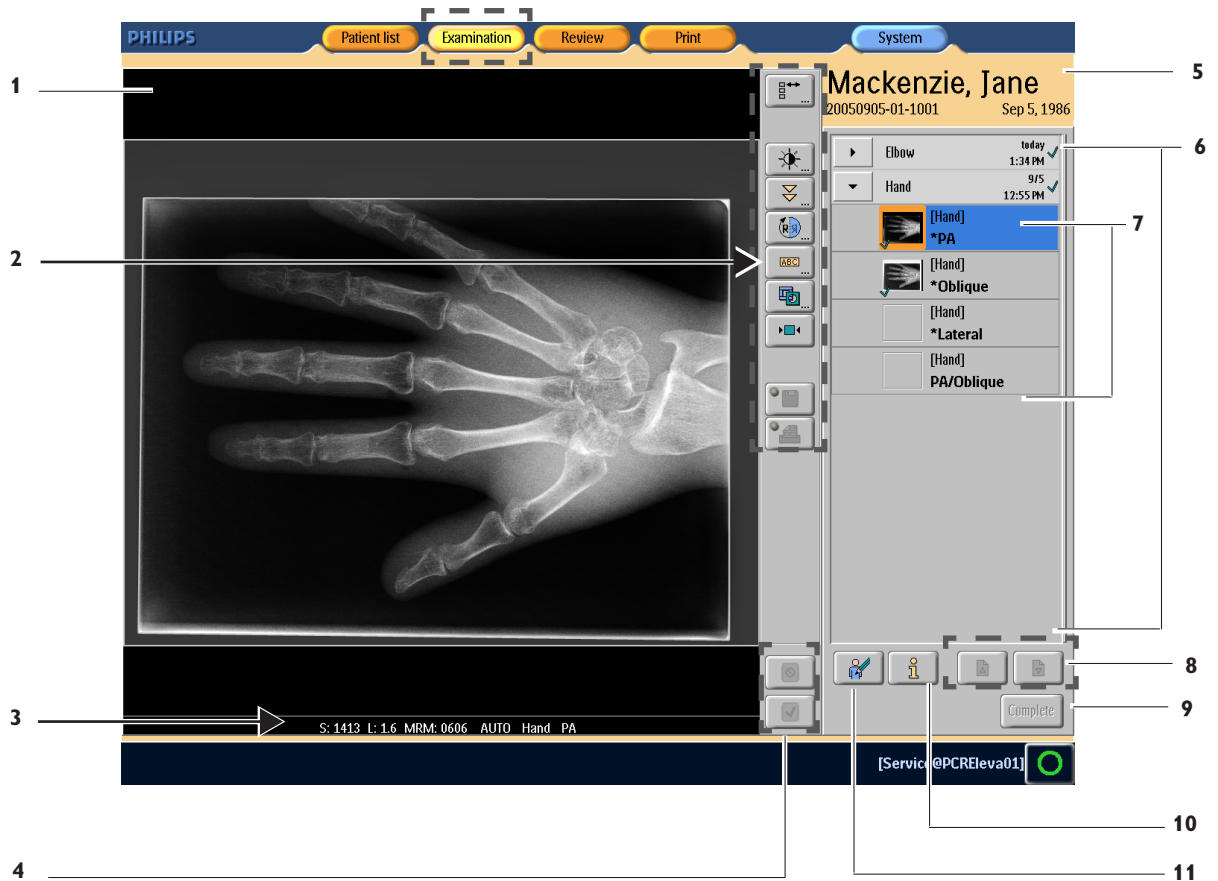
Close

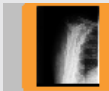


- 5
- End RIS query.

8 Performing the examination

The Examination section contains all displays and tools for an examination with image plates.

8.1 Overview



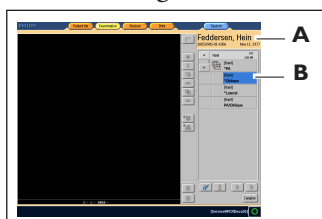
Number	Meaning
1	Display of the selected image / selected view
2	Toolbar for image processing and for image information. You will find the tools for image processing in chapter 9
3	Exposure and examination information
4	Accept or reject selected exposure
5	Information on the selected patient
6	Examination worklist with an examination folder displayed (7)
7	<div>Display of an examination folder with image examination status</div> <div> [Shoulder] Axial</div> <div>The orange frame means that this image is maximized.</div> <div> [Shoulder] *AP Internal Rot</div> <div>The blue background means that this exposure is selected and can be assigned</div> <div>You can view and assign the image at the same time</div> <div>If the orange-framed view disappears from the screen as a result of scrolling, a small square in the upper right of the image indicates this by way of warning that the large image does not correspond to the active view in the right-hand third of the screen</div>
8	Scroll through the examination list.
9	<div>Complete all views and types of examination. After pressing "Complete" a small green tick appears on the bottom left of the thumbnail X-ray</div> <div> [Hand] *PA</div>
10	Display information on the selected type of examination or view
11	Change/add patient data

8.2 Examination procedure – Overview

You will find the individual steps involved in examinations with plate cassettes in chapters 8.3.1 to 8.3.4.

You are in the Patient list and have selected a patient.


- Examination**
- 1 Select Examination section (quick select).
 - The Examination section appears.
 - The first type of examination (**A**) is open, the first view (**B**) is selected and the background is blue.



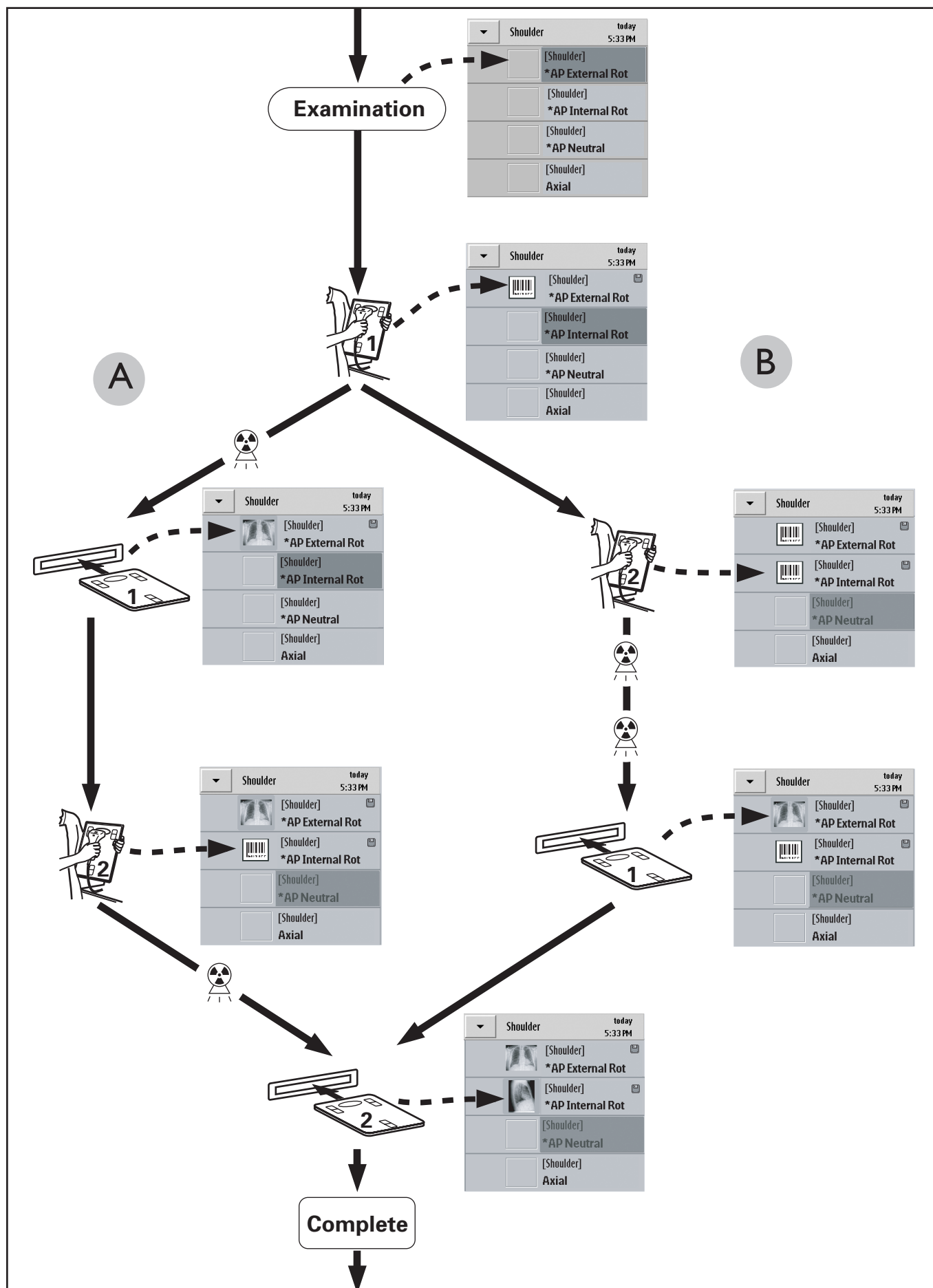
- 2 The PCR system supports many examination procedures. Choose the most efficient.
- 3 Once you have taken all views and performed all types of examination for the selected patient, you can complete the examination.

Complete

Complete the examination

- Exposures are saved, printed and archived – if so configured. A message is sent to RIS.
 - You return to the Patient list.
 - In the Patient list, the patient is given the symbol  to indicate completion. If examinations are still outstanding, an hourglass appears.
- 4 For the next patient, continue with step 1.

The following diagram shows an example of two individual steps (A, B). It begins with the quick selection of the Examination section as in step 1. Follow the black arrow through the individual steps. The dashed arrow shows the change on the operator's console.



8.3 Examination steps in detail

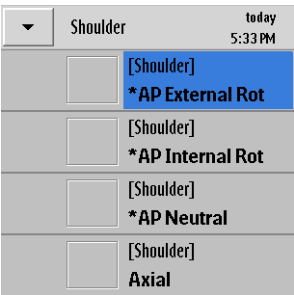
8.3.1 Assigning plate cassettes

The plate cassettes are generally assigned to the patient using a barcode reader. With one-console systems and the Compano plate reader, it is possible to work without a barcode reader.

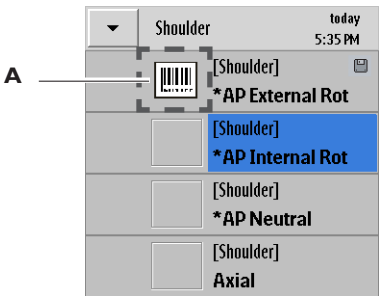
Assignment with barcode reader

The system manager can configure this mode for Compano systems. You have selected a patient and are in the Examination section.

- The first view of the examination type is selected and the background is blue:



- 1 Assign image plate with the barcode reader.
 - The barcode symbol appears.
 - The next view is automatically selected.



- 2 To select another view as the next standard view, click on the view you want.
 - The background of the new view turns blue.

A

- 3 Make exposures on image plates, read out image plates on the plate reader, and only then assign the next image plate with the barcode reader
or

B

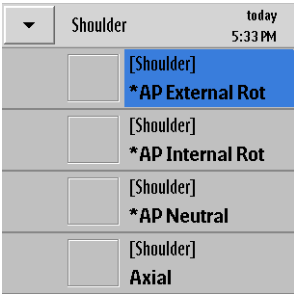
Repeat step 1 until all scheduled patient exposures are assigned to image plates.

If the barcode reader is not working, see the appendix for a solution (Chap. 14.2).

Assignment without barcode reader

You have selected a patient and are in the Examination section.

- The first view of the examination type is selected and the background is blue:



- 1 Slide the cassette with the exposed plate into the plate reader.
 - The read-out image is assigned to the patient and appears on the screen.

8.3.2 Reading out image plates on the plate reader

For information on this, see chapter 5.1.2.

Once an exposure has been read out, it appears on the screen in the “Examination” section.

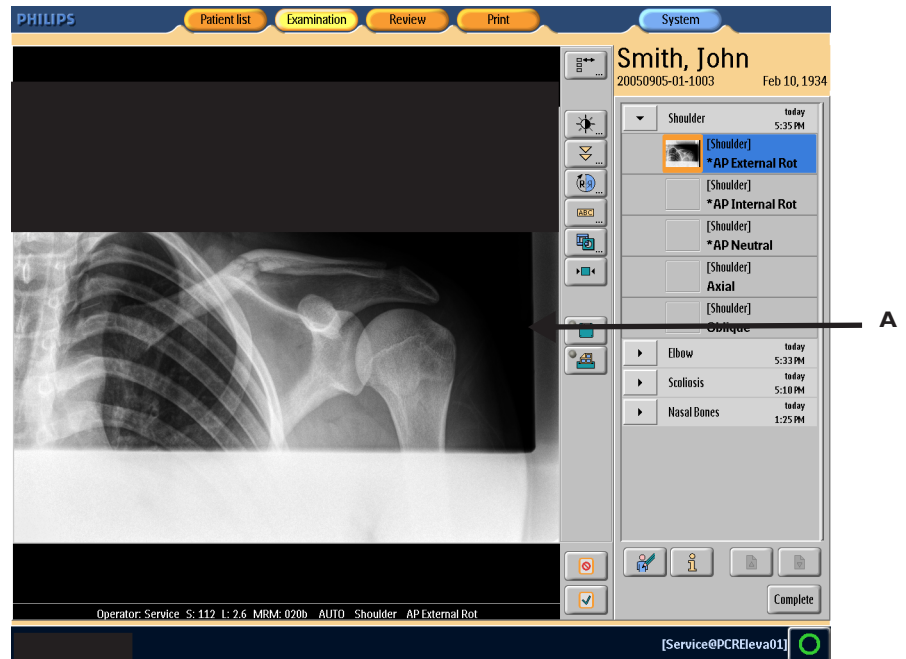
- 1 When you have read out all the patient's exposures, continue with the next chapter.

8.3.3

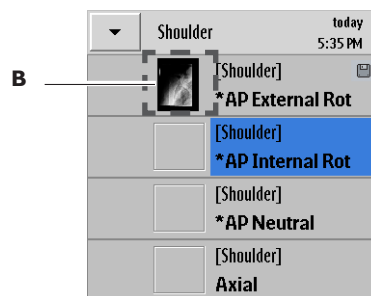
Checking image quality on the operator's console

The patient has been X-rayed. You have inserted the plate cassettes to be read out into the plate reader. This chapter tells you how you can check the image quality of the exposures and what ways there are of further improving image quality.

- The exposure is scanned from the image plate and appears on the screen:



As soon as the exposure is read out, it appears as a thumbnail (B) instead of the barcode and has an orange frame. This indicates that it is precisely this image that is maximized.



- 1 Check whether the image quality matches your expectations, e.g.:
 - Right view? Rotation or flipping necessary?
 - Do parts of the exposure have to be cropped?
 - Contrast and brightness
 - Should the exposure be annotated?

To improve image quality, the following image processing tools are at your disposal. For further information on the image processing tools, see chapter 9.2.

- 2 If the image quality of the exposure is suitable for diagnosis, you can confirm the image quality:

3 Confirm image quality



If the image quality is not suitable for diagnosis, you can edit the exposure with the image processing tools.



4 If, despite the processing options, the exposure is not suitable for diagnosis and cannot be improved, you can reject the exposure.

Reject image quality of the exposure; you can give a reason.

- You can then repeat the exposure.

5 Repeat steps 1 to 3 for all other patient exposures.

8.3.4 Archiving exposures, printing and completing the examination

The Service Organization can program the functions “Save” and “AutoPrint”.

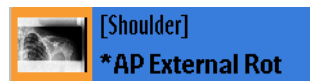
1 Check whether exposures are designated for saving.

- Exposure is designated for saving: symbol (A) appears



or

- Exposure is not designated for saving: no symbol.

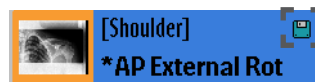


If Save is not activated:



2 Turn on Save function.

- LED lights up green.
- The Save symbol appears:



Warning!

- **Always activate AutoSave if you are not printing all exposures on films for permanent archiving!**
- **AutoSave is configured to automatically save data to PACS.**
- **If AutoSave is not activated, the exposures are not saved automatically and you may lose data.**
- **If you archive all exposures on films, you do not have to activate the AutoSave function.**

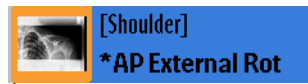
3 Check whether exposures are designated for AutoPrint.

- Exposure is designated for AutoPrint: symbol (A) appears



or

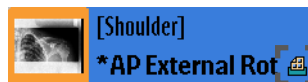
- Exposure is not designated for AutoPrint: no symbol.



If AutoPrint is not activated:



- 4 Turn on AutoPrint function.
 - LED lights up green.
 - The AutoPrint symbol appears




Warning!

- **Always activate AutoPrint if you do not want to archive all exposures in PACS!**
- **If AutoPrint is not activated, the exposures are not printed automatically and you may lose data.**
- **If you archive all exposures in PACS, you do not have to activate the AutoPrint function.**

- 5 Now you have 2 options:
 1. Prepare exposure for printing and print (see chapter 10)

or

Complete

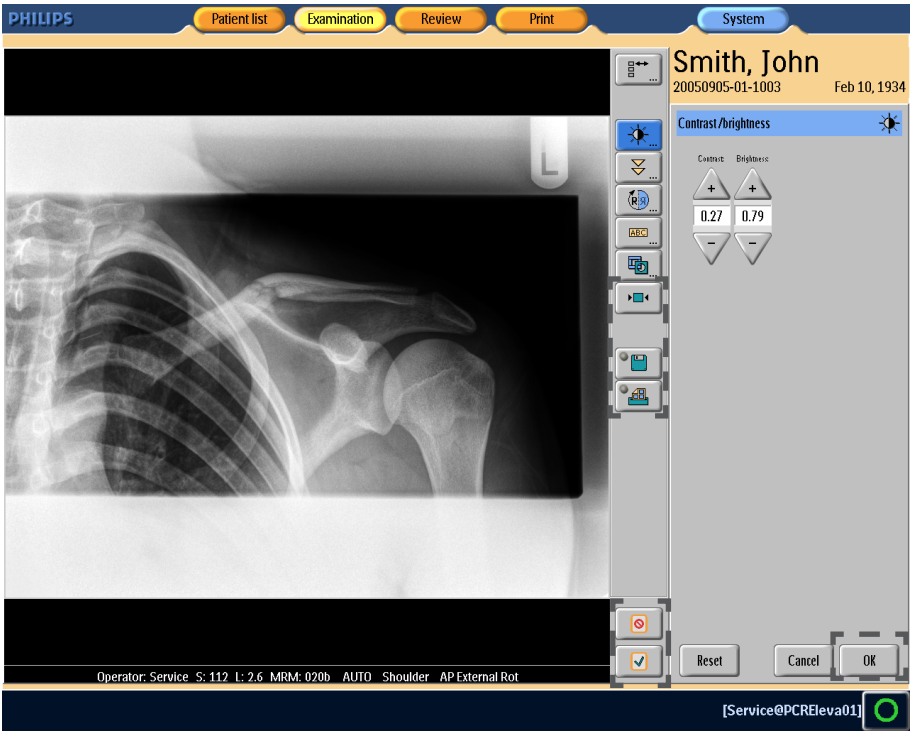
2. Finish the examination.
 - Exposures are saved once Save is activated and printed once AutoPrint is activated.
 - The Patient list appears.
 - In the Patient List, the patient is given the symbol  to indicate completion.
- 6 For the next patient, continue with chapter 8.2, step 1.





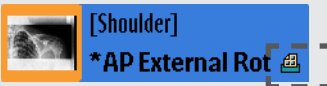


8.3.5 Making more than one exposure with the same view

The procedure is the same as for two or more separate views, the only difference being that you must first of all open the view. You can reassign a view that has already been done or assigned; this then gives you two views.

8.4 Workflow control

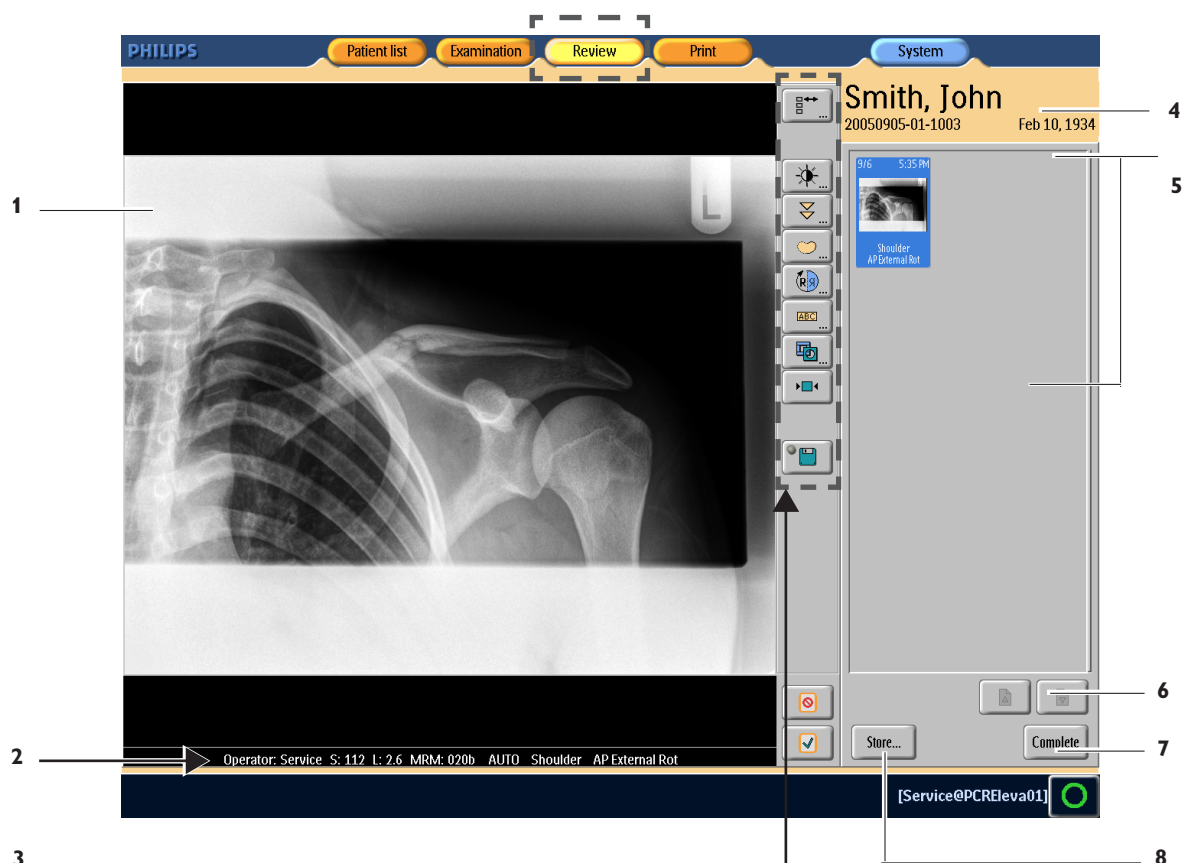
The proficient operator only requires a few buttons for routine workflow:



Button	Meaning
	Reset all changes by all image processing tools to the original state.
	<p>Save: activate/deactivate automatic save</p> <p>When automatic save is active, the LED symbol lights up green; a corresponding symbol appears beside the exposure.</p>  <p>The symbol has the following meaning: The image is designated for automatic export. Once you confirm the image or complete the examination, it is exported. You can deactivate the designation up to this point.</p>
	<p>Print: activate/deactivate automatic print</p> <p>When automatic print is active, the LED symbol lights up green; a corresponding symbol appears beside the exposure.</p>  <p>The symbol has the following meaning:</p> <ul style="list-style-type: none"> - The image is designated for automatic printing with or without final inspection. Then you can see it here and, if necessary, stop the print job, as long as it has not yet been printed. - The image was placed manually on a film; you cannot reset this.
	<p>Reject image quality</p> <p>The exposure is unsuitable for diagnosis: a new exposure is necessary.</p>
	<p>Confirm image quality</p> <p>The exposure is suitable for diagnosis.</p>

9 Review/image processing

Here you can access all images in the selected patient's image memory directly and easily. The Review section offers advanced image processing tools for checking image quality and for exporting images to an archive.



Number	Meaning
1	Display of the selected image / selected view
2	Exposure and examination information
3	Tools for image processing (see chapter 9.2)
4	Information on the selected patient
5	Image memory; contains all the selected patient's exposures.
6	Scroll through the image memory.
7	Complete all views and types of examination.
8	Store selected view / type of examination in the archive.

You use the image processing tools when you have already made an exposure and want to edit it.

9.1 Image processing tool functions – for the system manager only

You can do the following with the image processing tools:

- Change contrast and brightness,
- Rotate and flip exposures,
- Annotate exposures,
- Crop parts of the exposure,
- Set image processing protocols and
- Set image processing parameters.

The functioning of each tool is explained in the following chapters:



- 9.2.1 Setting contrast and brightness



- 9.2.2 Rotating and flipping exposures



- 9.2.3 Annotating exposures



- 9.2.4 Shutter function



- 9.2.5 Setting image processing protocols



- 9.2.6 Setting image processing parameters



If you cannot find an image processing tool in the image processing bar, you can call it up via the function button “Call up and customize image processing tools”. In addition, you can customize the image processing bar to your requirements via this function button. For further information on this, see chapter 9.2.7f.

9.2 Individual image processing tools

9.2.1 Setting contrast and brightness



For details on how to operate the slide controls, see chapter 6.2.3. The following table shows what you can change:

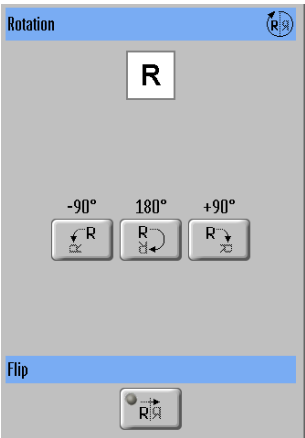
Button	Meaning
	<p>To set the contrast</p> <p>+ increases the contrast</p> <p>- reduces the contrast</p>
	<p>To set the brightness</p> <p>+ brighter</p> <p>- darker</p>

- Confirm or reset the changes using the function buttons.

9.2.2
Rotating and flipping exposures



Here you will find the following tools:



You can change the following:

Button	Meaning
	Rotate 90° counterclockwise
	Rotate 90° clockwise
	Rotate 180°
	<p>Flip the exposure top to bottom</p> <p>When “Flip” is active, the LED symbol lights up green.</p> <p> appears in the bar under the exposure, which also indicates that the exposure has been flipped:</p>

- Confirm or reset the changes using the function buttons.






9.2.3

Annotating exposures



Here you will find the following tools:

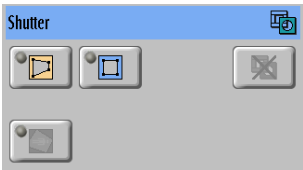


Button	Meaning
	Position L
	Position R
Enter free text	Select text box Enter text Press Enter or Click on predefined text Text appears in the image. The system manager can program this text.
Font size	Change font size
	Delete some text
	Delete all text
	Write all image processing parameters on image (for the system manager only).




9.2.4
Shutter function


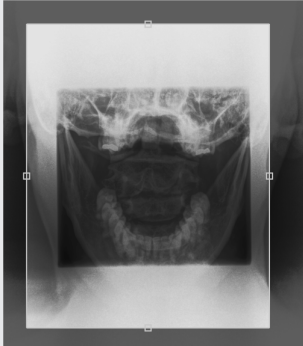
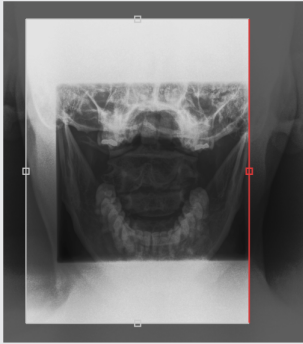
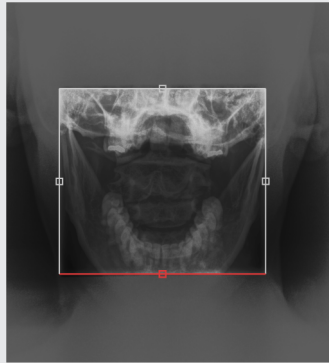




Here you will find the following tools:



You can change the following:

Button	Meaning
	<p>Automatic shutter</p> <p>It automatically makes a suggestion first of all, which you may then change.</p> <p>Areas of image are automatically cropped. The shutter automatically detects blank areas caused by the lead. In most cases, you do not have to postprocess manually.</p> <p>The automatic shutter has a polygon format. As such, it detects both oblique and irregular collimations with more than 4 sides.</p> <p>Before the automatic shutter is turned on</p>  <p>After the automatic shutter is turned on</p> 

Button	Meaning
	<p>Rectangular shutter</p> <p>It automatically makes a suggestion first of all, which you may then change.</p>  <p>To do so, click on the boundary of the side you want to change. It turns red. Now drag the boundary line to where you want it or click on the place you want.</p>  <p>Do this with all the sides you want to change.</p> 
	<p>Turn off shutter function</p> <p>All shutters are reset. You see the exposure without the shutter.</p>
	<p>Zoom to shutter</p> <p>The collimated area is magnified to screen size. You only see the result once you close the shutter tool; it does not affect the image when exporting or printing.</p>

- Confirm or reset the changes using the function buttons.

9.2.5
Setting image processing protocols



Danger!



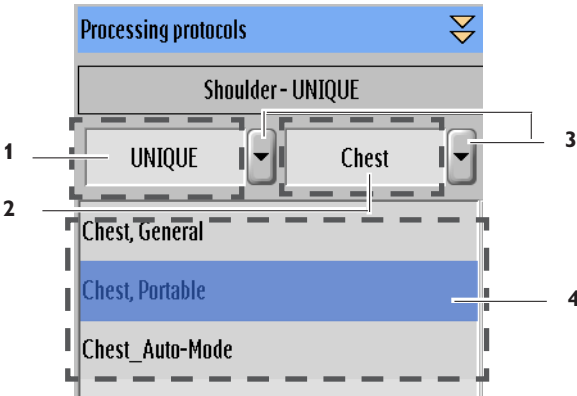
For the system manager only!

The incorrect use of image processing functions can give rise to artifacts in the image. Image information of relevance to diagnosis may be suppressed or misrepresented. You should have expert knowledge of digital image processing to change preset processing protocol parameters.

Image processing protocols are parameter sets for processing raw image data into images with diagnostic capability. Every protocol is optimized for a specific part of the body. To make them easier to find, the protocols are sorted by body region.



On the PCR system, you can choose from the processing techniques “UNIQUE”, “UM” (Unsharp Masking) and “DRR” (Dynamic Range Reconstruction). Philips recommends “UNIQUE”.

It is defined during installation or user-specific configuration of the PCR system with which technique the views are processed. In the case of PCR images you can subsequently change the processing technique or in the case of special exposures, assign user-defined image processing protocols using the tools.



Using the arrow buttons (3) you can select both the processing techniques (1) and the body regions (2).

Once you have selected a processing technique and a body region, Table (4) shows you the available image processing protocols. The background of the selected image processing protocol turns blue.

Number	Meaning
1	Display of the selected processing parameters
2	Display of the selected body region
3	Using the arrows, open the menu to select the processing parameters and the body regions. You can select the following processing protocols:
	
You can select the following body regions:	
	

- Confirm or reset the changes using the function buttons.



For further information on this, refer to the Application Guide, which you are given after training by an application specialist.

9.2.6

Setting image processing parameters



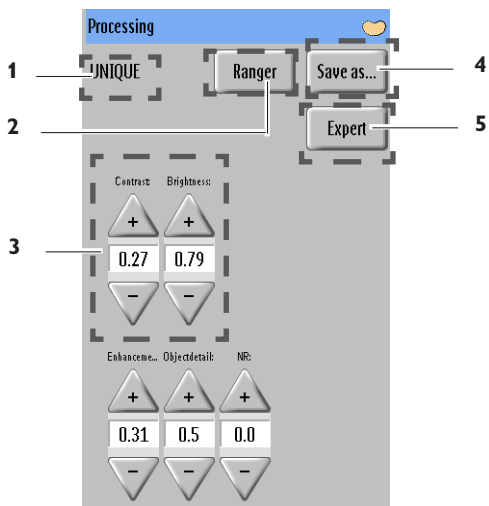
Danger!



For the system manager only!!

The incorrect use of image processing functions can give rise to artifacts in the image. Image information of relevance to diagnosis may be suppressed or misrepresented. You should have expert knowledge of digital image processing to change preset processing protocol parameters.

Using the image processing parameters, you can generate image processing protocols or customize them to your needs.



Number	Meaning
1	Display selected image processing parameter – in the example: UNIQUE.
2	Display “Ranger” image processing parameter; other settings are possible.
3	Set contrast and brightness.
4	Save changes to image processing parameters. The following appears <div data-bbox="711 1133 1412 1749"> </div>
5	Open other image processing parameters.

- Confirm or reset the changes using the function buttons.



For further information on this, refer to the *Application Guide*, which you are given after training by an application specialist.

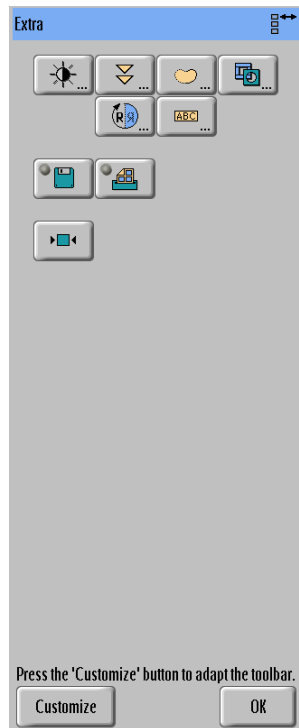
9.2.7

Calling up image processing tools

This function is only available for the system manager.



Call up all image processing tools. The following appears



- Select tool to use.

9.2.8

Customizing image processing tools

This function is available for the system manager only.

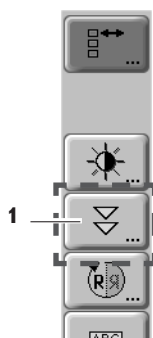
Customize

Click on Customize; you can customize the image processing tools in the toolbar as you need them.

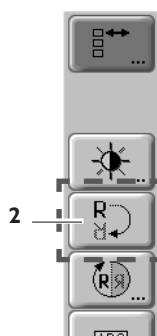
- The background of the button turns blue and the tool changes:



- Select tool or function you want.
 - The background of the button turns blue:



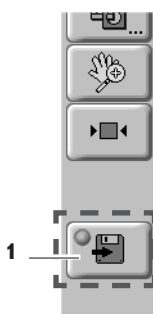
- Click on the place in the toolbar where you want to put the tool or function (1).
 - The selected tool appears in the toolbar (2) in the chosen place:

**Removing an image processing tool**

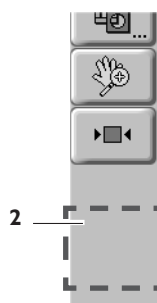
If you want to remove an image processing tool from the image processing toolbar, replace the tool with the blank button:



- Click on the blank button.
 - The background of the button turns blue:



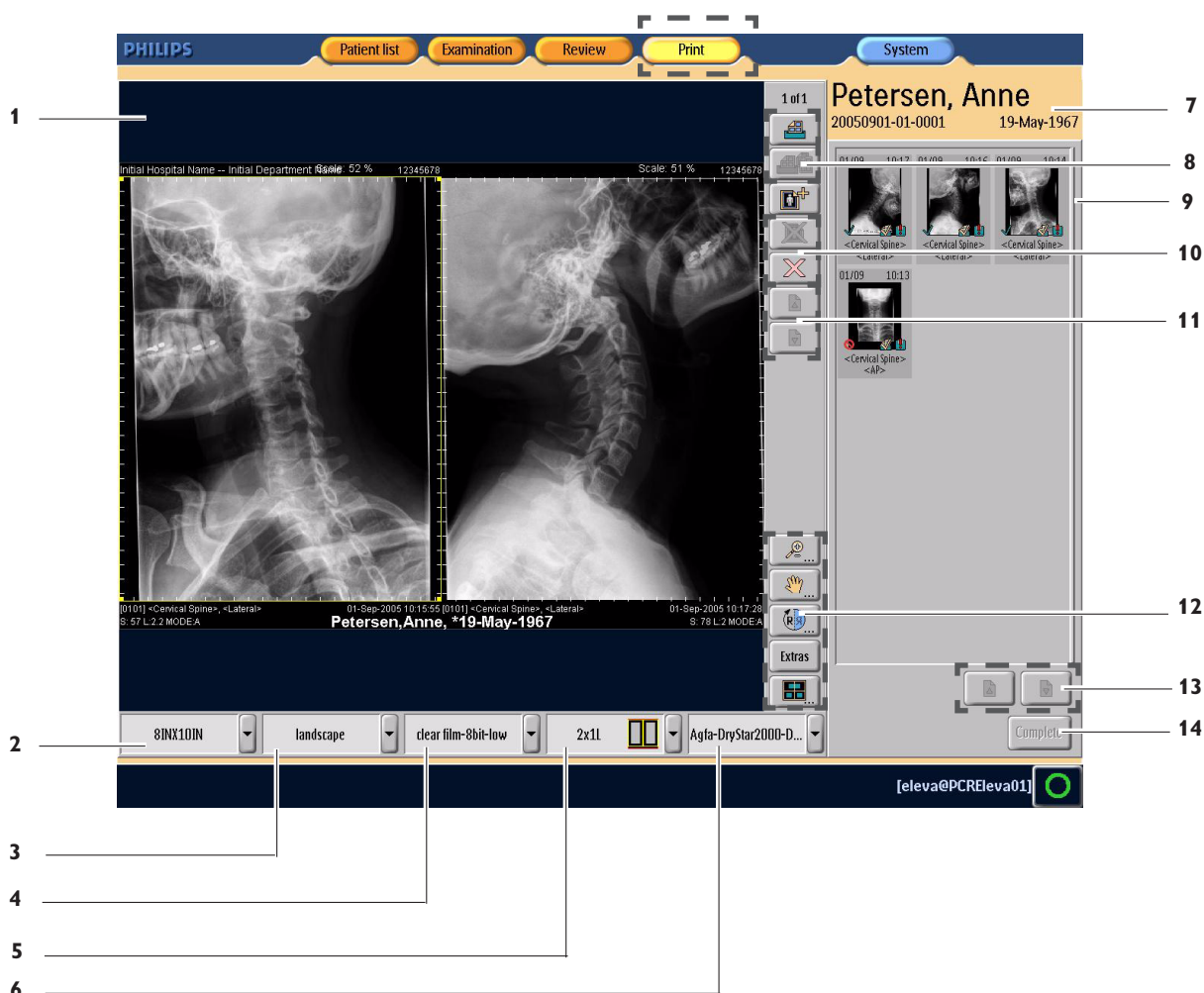
- Then click on the place in the toolbar where you want to put the tool or function (1).
 - The selected tool is removed (2):



10 Print

10.1 Overview

In the Print section you can access all images in the selected patient's image memory directly and easily. You can select print and film parameters, layout images on preformatted print templates and manipulate them.



Number	Meaning
1	Film preview and layout area
2	Select film / paper size
3	Select film / paper format
4	Select film / paper type
5	Select print template
6	Select printer
7	Information on the selected patient
8	Print: one or all pages
9	Image memory
10	Delete selected image, delete selected element
11	Scroll through the films, add films
12	Tools for film annotation and processing
13	Scroll through the image memory
14	Accept changes

10.1.1**Petersen, Anne**

20050609-0001

19.05.1967

The patient information window

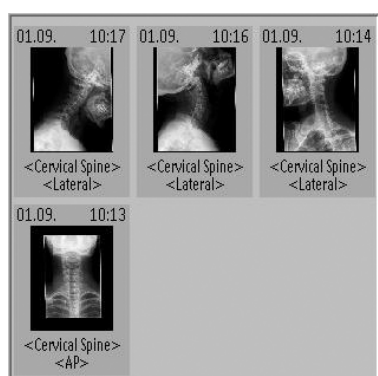
It shows

- Patient name
- Patient ID
- Date of birth

The information relates to the active image in the memory and is only displayed if stored. The information shown in the window changes if you select another image.

10.1.2**The image memory**

It shows all a patient's images. If there are more images than can be shown, you can scroll through them.



10.1.3 The preview window

It shows the layout of the current image.



















The menu bar

It shows the current film and printer settings. You can change the layout with the following options:

Button	Meaning
<div>8INX10IN</div>	Select medium size.
<div>landscape</div>	Select medium format (portrait/landscape).
<div>clear film-8bit-low</div>	Select type of medium.
<div>2x1P</div>	Select template (preset or user-defined).
<div>Agfa-DryStar2000-D...</div>	Select printer.

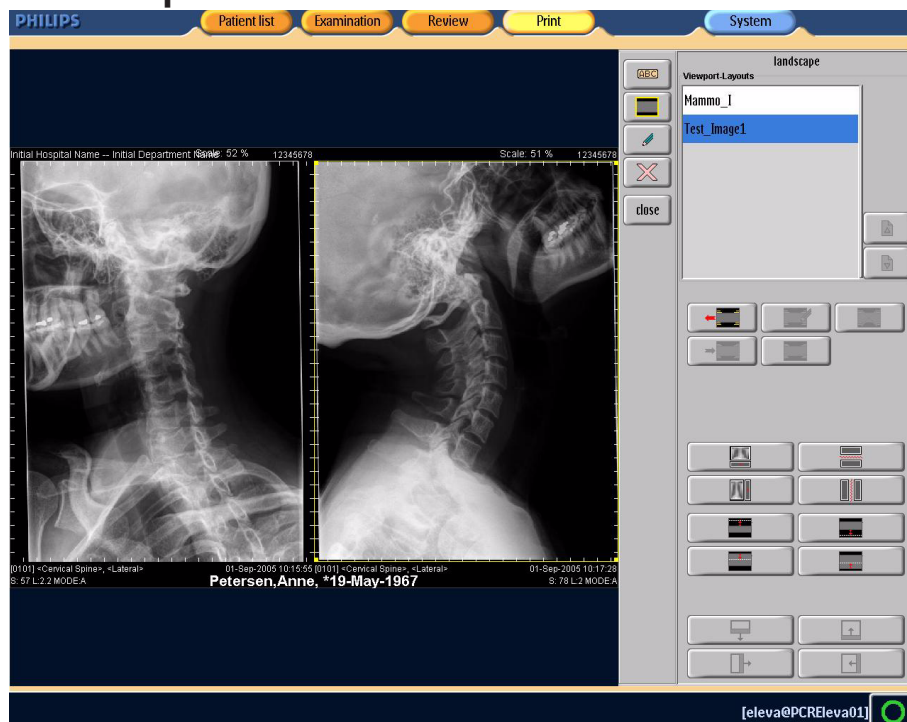
The printer bar




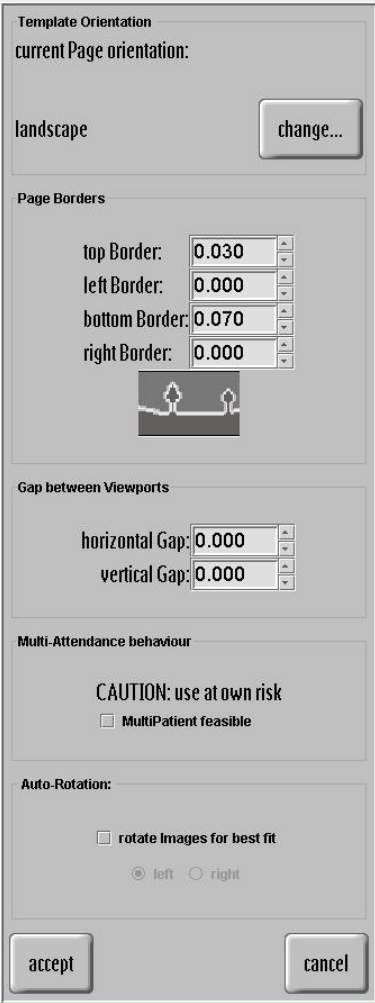
Button	Meaning
2 of 3	Counter, shows <ul style="list-style-type: none"> – the page number of the preview, – the numbers of the current pages in the composer.
	Print film.
	Print more than one film.
	Add film.
	Delete film.
	Delete selected element from the preview page; only active if the selected element can be deleted.
	Go to next page; only active if there are two or more pages in the composer.
	Go to previous page; only active if there are two or more pages in the composer.
	 Reduce image by 1%.
	 Magnify image by 1%.
	 Reduce image by 5%.
	 Magnify image by 5%.
	 Fit image in frame.
	 Show image 100%.
Apply same scale	Use the same scale for all images on the film.
Link images	Applies changes on one image to all images.
	 Scaling value
	 Scale image.






Button	Meaning
	Move image up to left.
	Move image up.
	Move image up to right.
	Move image to left.
	Center image.
	Move image to right.
	Move image down to left.
	Move image down.
	Move image down to right.
	Rotate image 90°.
	Rotate image -90°.
	Return image to original state.
Extras	Edit templates.
	Show region of interest.
	Move image into top left corner.
	Move image up to top border.
	Move image into top right corner.
	Move image to left border.
	Center image.
	Move image to right border.
	Move image into bottom left corner.
	Move image down to bottom border.
	Move image into bottom right corner.


















10.1.4

The template editor



Button	Meaning
  	<p>Shows the geometric data of the template editor layout. The values are in 1/1000 increments of the print medium format.</p>  <ul style="list-style-type: none"> • Change: alternate between portrait and landscape • Top border: distance between image and top border • Left border: distance between image and left border • Right border: distance between image and right border • Bottom border: distance between image and bottom border • Horizontal gap: distance between the images in landscape • Vertical gap: distance between the images in portrait • Multi-attendance behavior: not active with PCR • Auto-Rotation: select template orientation (portrait/landscape) • Accept: confirm changes • Cancel: cancel changes

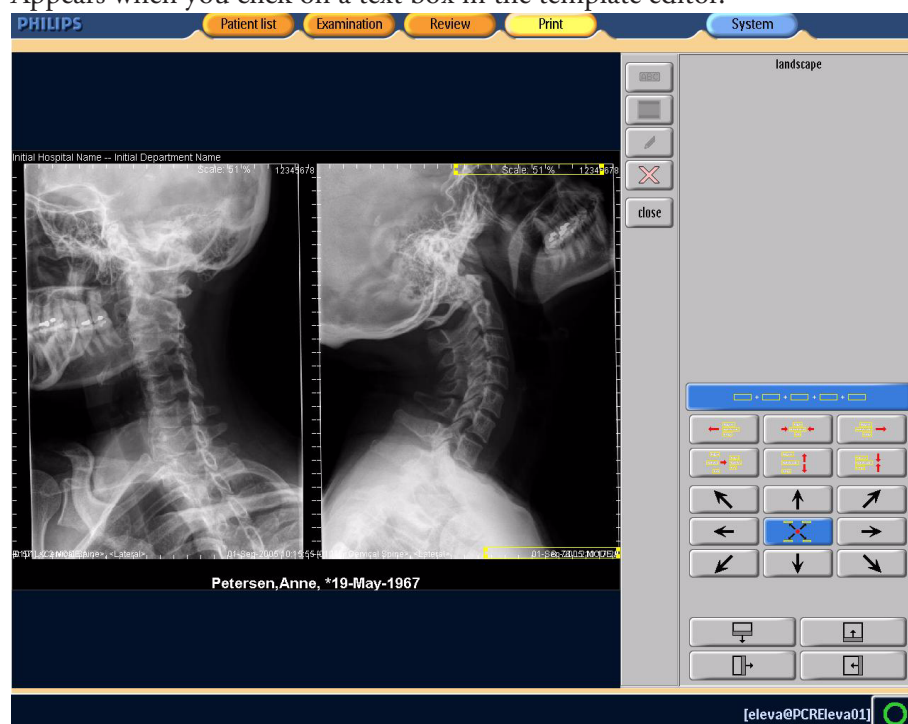
Button	Meaning
   or new viewport	<p>Shows the text editor</p> <p>The values are in 1/1000 increments of the viewport.</p> <div data-bbox="810 315 1185 1294"> <p>TextBox Position:</p> <p>x-Pos: <input type="text" value="1.000"/></p> <p>y-Pos: <input type="text" value="1.000"/></p> <p>width: <input type="text" value="1.000"/></p> <p>height: <input type="text" value="1.000"/></p> <p>Text Alignment horizontal: <input type="text" value="center"/></p> <p>Text Alignment vertical: <input type="text" value="center"/></p> <p>select StringGroup:</p> <p><input type="text" value="patientString"/></p> <p>preview:</p> <p><input type="text" value="DATE,JDICOM_REFERRING_PHYSICIAN_NAME"/></p> <p><input type="button" value="accept"/> <input type="button" value="cancel"/></p> </div> <ul style="list-style-type: none"> • X-Pos: horizontal positioning of the upper left corner of the text box • Y-Pos: vertical positioning of the upper left corner of the text box • Width: width of the text box • Height: height of the text box • Text Alignment horizontal: horizontal positioning of the text in the text box • Text Alignment vertical: vertical positioning of the text in the text box • Select StringGroup: contains a list of all preconfigured DICOM data groups. • Preview: composition of the selected DICOM data group • Accept: confirm changes • Cancel: cancel changes
	Edit template changes
	Cancel template changes
Close	Close template editor

Button	Meaning
Page-layouts	Displays the possible layouts you can apply to the film.
Viewport-layouts	Displays the possible layouts you can apply to the selected viewport.
	Apply selected layout to the selected viewport. For the system manager only.
	Change selected viewport. For the system manager only.
	Delete selected element from the list. For the system manager only.
	Add change to the list (save). For the system manager only.
	Create new, empty layout. For the system manager only.
	Reduce all viewports on the film vertically and add a new viewport.
	Reduce selected viewport vertically and add a new viewport.
	Reduce all viewports on the film horizontally and add a new viewport.
	Reduce area for the selected viewport horizontally and add a new viewport.
	Increase area for the selected viewport toward the top step by step.
	Increase area for the selected viewport toward the bottom step by step.
	Reduce area for the selected viewport from the top step by step, to allow space for text outside the image.
	Reduce the selected viewport from the bottom step by step, to allow space for text outside the image.
	Magnify viewport, line or text box of an image area.
	Reduce viewport, line or text box of an image area.
	Magnify viewport, column or text box of an image area.
	Reduce viewport, column or text box of an image area.





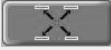
10.1.5

The text box editor

Appears when you click on a text box in the template editor.



Button	Meaning
	Select more than one text box.
	Align text boxes to the left.
	Center text boxes.
	Align text boxes to the right.
	Merge text boxes.
	Separate text boxes step by step.
	Merge text boxes step by step.
	Move text box toward top left step by step; in small increments using Ctrl key.
	Move text box toward top step by step; in small increments using Ctrl key.
	Move text box toward right step by step; in small increments using Ctrl key.
	Move text box toward left step by step; in small increments using Ctrl key.

Button	Meaning
	Move text box toward right step by step; in small increments using Ctrl key.
	Move text box toward bottom left step by step; in small increments using Ctrl key.
	Move text box toward bottom step by step; in small increments using Ctrl key.
	Move text box toward bottom right step by step; in small increments using Ctrl key.
	When used in conjunction with one of the 8 direction keys, this button places the text box at the corresponding border or in the corresponding corner.

10.1.6 Activating Print section

Editing settings for a page

You can change the printer settings by selecting them from a selection window in the menu bar. Some of the available settings depend on what printer is selected (e.g. format, medium).

If more than one page is sent to the printer, you can edit each page individually. You can move from page to page using “Next” and “Back”.

Configuring the printer for the current job



- 1 Click on this
A list of all available printers appears.
- 2 Select printer
Please note:
Your choice of printer influences the list of available print media (size, orientation, type). The menu bar shows only the print media supported by the selected printer. This means that changing the printer may change size, orientation and type if the previously selected printer supported a print medium which the current printer does not.

Setting the medium size



- 1 Click on this
A list of all available medium sizes appears; it depends on the selected printer.
- 2 Select medium size
Please note:
Your choice of medium size influences the list of available orientations and types. The menu bar shows only the print media supported by the selected printer. This means that changing the printer may change size, orientation and type if the previously selected printer supported a print medium which the current printer does not.

Setting the medium orientation



- 1 Click on this
A list of all available medium orientations appears; it depends on the selected printer.
- 2 Select medium orientation
Please note:
Your choice of medium orientation influences the list of available sizes and types. The control bar shows only the print media supported by the selected printer. This means that changing the printer may change size, orientation and type if the previously selected printer supported a print medium which the current printer does not.



Setting the medium type

- 1 Click on this
A list of all the available medium types appears; this list depends on the selected printer.
- 2 Select medium type



Set template for one page

- 1 Click on this
A list of all the available templates appears; this list depends on the selected medium orientation as templates are orientation-specific.

The following standard templates are available in portrait and landscape:

- 1 in 1
- 2 in 1 line
- 2 in 1 column
- 4 in 1

- 2 Select template

10.1.7 Editing images and viewports

Placing an image in a viewport

All images in a print job appear in the set of saved images. You can place an image in the viewport by “dragging and dropping”:

- 1 Select image from the set of saved images by clicking on it
- 2 Click on the selected viewport
If the viewport is empty, the image is placed there.
If there is already an image in the viewport, it is replaced by the new one.
If the old image was changed, this is applied to the new image.

Removing an image from the viewport

- 1 Select image from the viewport by clicking on it
- 2 Click on the collection of images
The selected image is removed from the viewport.
If the image was changed, the changes are also deleted.

Printing the image

If the preview is OK,
1 send it to the printer.



Now you can

- compose a new page with the images on hand
- or
- close the composer.

Complete

Cancel print job

(only with Easyprint or Autoprint)

If the preview is not OK or if you do not want to print

Complete

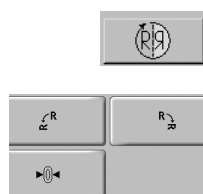
- 1 Cancel.

10.1.8

The tools for free composing

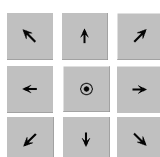
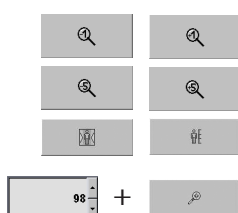
The printer bar provides you with other print options.

Clicking on one of these buttons will open a submenu from which you can select the function you want. Clicking the button again closes the submenu.



Apply same
scale

Link images

**Changing the image orientation**

- 1 Open “Image orientation” submenu.

You can

- rotate the image 90° to the left/right
- undo rotation and flipping

Scaling the image

Open “Scale image” submenu.

Use the same scale for all images on the film

Applies changes on one image to all images

You can

- reduce/magnify the image by 1%
- reduce/magnify the image by 5%
- change the image so that it fits the viewport exactly
- display the image in original size
- set a percentage.

Zooming on an image field

Zooming on an image field means moving the image as if under a magnifying glass. This function is usually used on images that are larger than the viewport.

- 1 Open “Zoom image” submenu.

You can

- center (button in the middle) the visible part of the image or move it 1% of the image size toward the
- top left
- top
- top right
- left
- right
- bottom left
- bottom
- bottom right

The default visible part of the image is top left.

- 2 Click on the image you wish you move.
- 3 Move image by clicking on one of the 9 direction buttons, until it is in the position you want.

10.1.9 Extras

These functions are for changing templates and for displaying areas of interest.

Extras 1 Open “Extras” submenu

You can

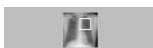
- change the current template



1 Open the template editor The current template appears.

2 Change template

- You cannot save the changed template.
- When you close the template editor, the changed template is taken by the composer and applied to the current page.
- If you select another template from the list of available templates in the composer, the changed template is temporarily saved in the template selection window. As long as no print job is sent with any template other than the temporary template, it remains available in the template selection window – even for more than one page.
- If you close the composer with “End” or print the current page, the changed template is deleted.
- If the temporary template applies for more than one page, it is retained and you can print pages one after another with this template. Once the last page is printed the temporary template is deleted.
- Showing a region of interest.
This means that you select a rectangular area of the image which has the same aspect ratio as the viewport. The image is then scaled and modified so that the selected region fills the viewport exactly. Maximum magnification is 500%.



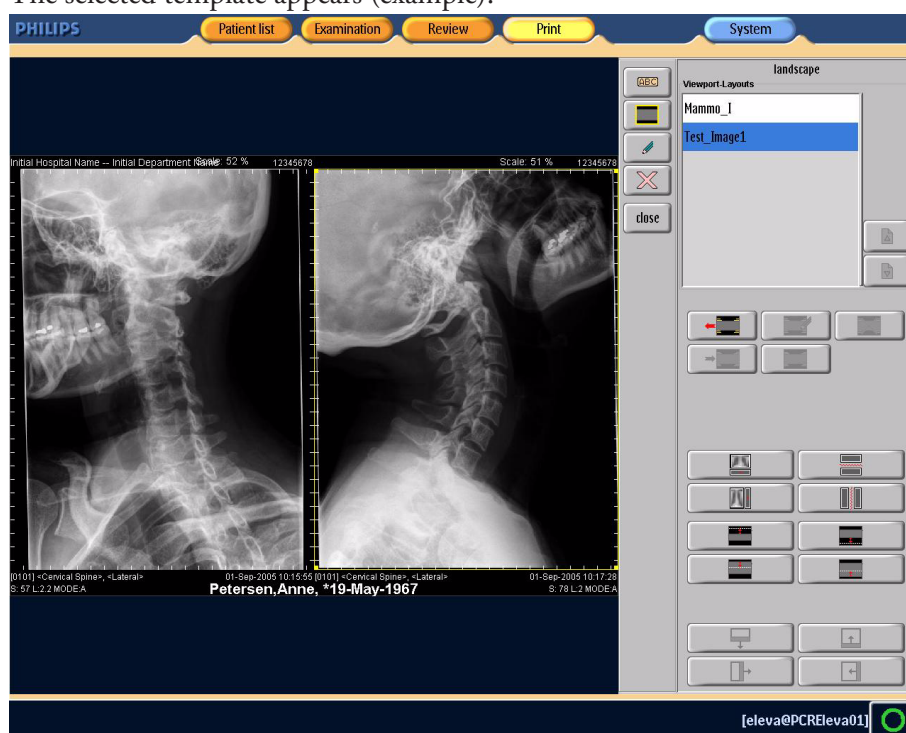
1 Click on this

2 Draw a rectangle (see above) The image is automatically modified.

10.1.10 Using the template editor

Changing an existing template

- | | | |
|----------------|---|---|
| Print settings | 1 | Call up composer function |
| Templates | 2 | Call up list of templates |
| | 3 | Select template to be changed |
| Edit | 4 | Click on Edit <ul style="list-style-type: none"> Unless the selected template is a read template, continue with step 9. If the selected template is a read template (you can tell this by “*”), you cannot change it. Proceed as follows: |
| Duplicate | 5 | Duplicate template |
| | 6 | Select duplicate. |
| Edit | 7 | Open the template editor
The selected template appears (example). |



- | | | |
|-------|---|---|
| | 8 | Change template |
| Close | 9 | Save changes
If you click on “Close” without saving the template, the template will be deleted once you close the template editor. |

Creating a new template

- | | | |
|----------------|---|--|
| Print settings | 1 | Call up composer function |
| Templates | 2 | Call up list of templates |
| Add | 3 | Add a new template
A new standard “1 in 1” template is created and added to the list of templates. You can edit this new template as described above. |

Changing a template in the template editor

Please note:

- Every template consists of the following elements:
 - One or more viewports
 - One or more text boxes for patient information
- Annotations are not part of a template.
- Templates are orientation-specific. This means that different templates apply for portrait and landscape media.
- A portrait template can never be placed on a medium for landscape and vice versa.
- In the template editor, the template has a layout orientation; it can be horizontal or vertical and is used for automatic layout when viewports are added or removed.
- All dimensions and positions of a template are relative values and relate to the format of the print medium selected later – given in 1/1000.

Changing the layout orientation of a template

The selected layout orientation appears on the top right in the template editor. You can only choose between “horizontal” and “vertical”.

Page orientation **1** Change orientation

Changing template settings

Settings **1** Open the “Settings” window
A list of current settings appears.

You can

- Change
- Change the template orientation
The selected template orientation appears on the top right in the template editor. You can only choose between “horizontal” and “vertical”.
 - Change template margins
The margin values define the area around the template, which are not valid for the viewports. It often makes sense to leave a header or footer free for text information. The values to be entered are relative coordinates – given in 1/1000 of the print medium format.
- 1** You define the template-edge distances by entering values for
 - top margin
 - left margin
 - right margin and
 - bottom margin.
 - 2** You define the vertical and horizontal spaces between two viewports by entering values for the
 - horizontal gap and the
 - vertical gap.

Accept **3** Confirm changes
or

Cancel Undo changes and return to the previous values.

Viewports

A template is structured in lines and columns. Depending on the layout, there are various options for adding a viewport to a template:

The first step is the same in all options:

Page orientation

If necessary, select the current layout orientation; “horizontal” or “vertical”

Adding a column viewport

- 1 Select page by clicking on any spot on the page that is not also an element of another page (viewport or text frame).



- 2 Add viewport
A new viewport is added at the top left of the template. The existing viewports are reduced so that all columns are the same width.

Adding a line viewport

- 1 Select page by clicking on any spot on the page that is not also an element of another page (viewport or text frame).



- 2 Add viewport
A new viewport is added at the top left of the template. The existing viewports are reduced so that all lines are the same width.

Adding a viewport to a column

- 1 Select the column to which the viewport is to be added by clicking on any viewport in this column.



- 2 Add viewport.
A new viewport is added to the top of the column; the column width stays the same. The existing viewports in the selected column are reduced so that all viewports in this column are the same height.

Adding a viewport to a line

- 1 Select the line to which the viewport is to be added by clicking on any viewport in this line.



- 2 Add viewport
A new viewport is added to the line on the left of the column; the column height stays the same. The existing viewports in the selected column are reduced so that all viewports in this line are the same width.

Manually magnifying or reducing a viewport

Please note:

The template editor is programmed to make optimal use of the space on the print medium. This means, for example, that reducing the viewport height automatically increases the height of the viewports below it in that column.

The first step is the same in all options:

Page orientation

If necessary, select the current layout orientation; “horizontal” or “vertical”

Changing the height of a viewport

This means keeping the top border where it is and moving the lower border. The viewport below it changes to the same extent as a result of the top border moving. It is only possible to change the height of individual viewports within the columns.

- 1 Select the viewport whose height you want to change
- 2 Increase/decrease height.
The bottom border moves down/up.



Please note:

You cannot move the bottom border of the last viewport in a column downward; you can only increase its height by making the viewport above it smaller.

Changing the height of a line of viewports

This means changing the height of all viewports within a line at the same time.

- 1 Select the line whose height you want to change
- 2 Increase/decrease height.
The bottom border of all viewports in the selected line moves down/up.



Please note:

You cannot move the bottom border of the last line downward; you can only increase its height by making the line above it smaller.

Changing the width of a viewport

This means keeping the left border where it is and moving the right border. The viewport to the right of it changes to the same extent; the left border of it is moved. It is only possible to change the width of individual viewports within the lines.

- 1 Select the viewport whose width you want to increase/decrease
- 2 Increase/decrease width.
The right border of the viewport moves to the right/left.



Please note:

The right border of the last viewport in a line cannot be moved to the right; you can only increase its width by reducing the width of the viewport to its left.

Changing the width of a column of viewports

This means changing the width of all viewports within a column at the same time.

- 1 Select the column whose width you want to change



- 2 Increase/decrease width

The right border of all viewports in the selected column moves to the right/left.

Please note:

The right border of the last viewport in a column cannot be moved to the right; you can only increase its width by reducing the width of the viewport to its left.

Changing the reference number and calipers position of a viewport

All viewports in a template have a reference number which appears in the preview. It defines the print sequence. All standard templates have four calipers (one per side), which you can delete separately.

- 1 Select the viewport to be changed



- 2 Click on this

The following appears:

- 3 Select desired viewport number

The selected viewport swaps this number with the viewport which had this number before

and/or

- 4 activate/deactivate calipers you want.

and/or

- 5 select image alignment

By putting the dot in the right place you can align the image as follows:

- aligned right/left
- on the top/bottom border
- in one of the four corners
- centered.

- Close
- 6 Close list

Deleting a viewport (not possible with 1-to-1 templates)

- 1 Select viewport



- 2 Delete viewport

The viewport is deleted from the line/column. If it is the only one in the line/column, then the line/column is also deleted.

Text box

Text boxes are text fields which are automatically filled in from a report or a data set. They can be a page element or a viewport element.

Adding a text box to a template

- 1 Click on the page or viewport to which the text box is to be added

- 2 Add text box



- 3 Define a text box with a rectangle (see above "Draw a rectangle")
Then the text box editor appears (see below "Adding a text box").

- Accept
- 4 Confirm new text box

or

- Cancel
- Undo and return to the previous setting.

Deleting a text box from a template

- 1 Select text box



- 2 Delete text box

Adding a text box

- 1 Select text box



- 2 Edit text box

The text box editor appears. The numerical values are the ones in the top left corner of the text box – relative to the elements to which they are added. This means that the coordinates of a text box, which belongs to a viewport and lies outside it, are either negative or larger than 1000.

You can change

- the position of the text box (“x-Pos”, “y-Pos”)
- the size of the text box (“width”, “height”)
- the position of the text (“horizontal”, “vertical”)
- the text (“select text block”)

- Accept 3 Confirm changes

or

- Cancel 4 Undo changes and return to the previous setting.

11 System administration and customization

You will find all the customization functions and all service functions in the System section. Functions not described here can be found in the Application Guide.

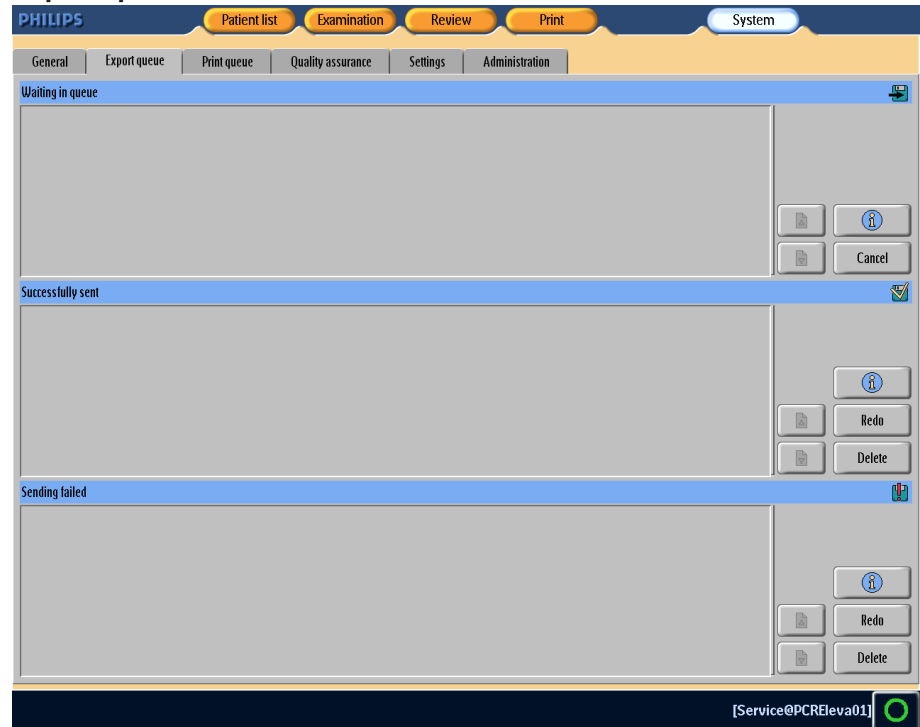
You can turn off the PCR system under System; see chapter 4.2.

Warning! *Certain functions may be operated by the system manager only. Only use the System section when you want to switch off the PCR system or if you have been trained to use this function.*



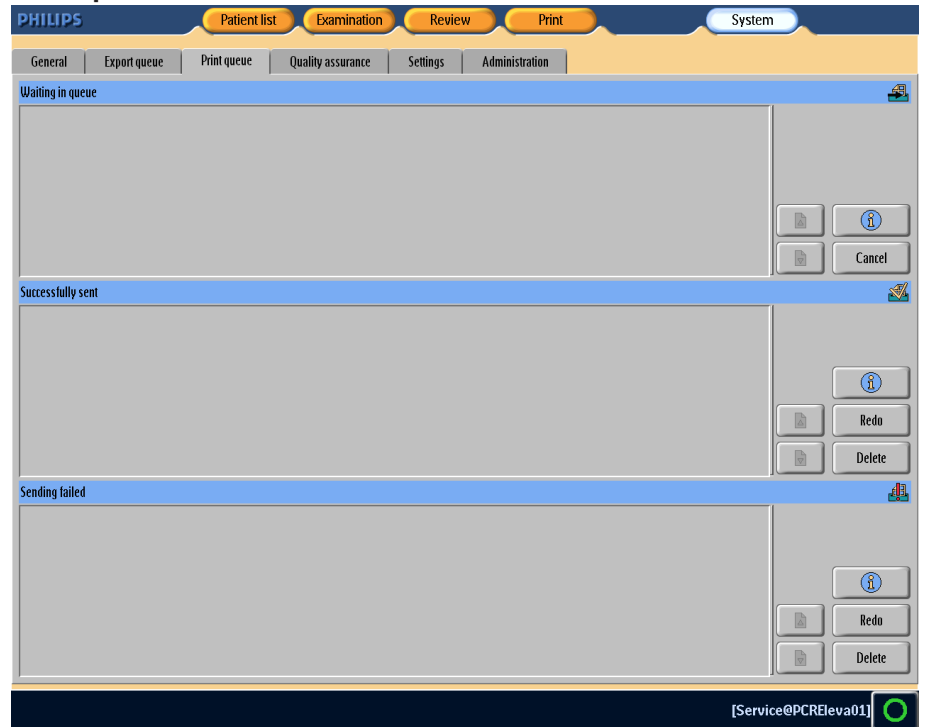
Logout	User logout; system remains on.
Restart	Shut down and restart system.
Exit	Shut down and turn off system.
Remote service access	Enable/disable remote service.
Service tool	For Service only.
System	Information about the system and software.
License status	Information about the license status.

Export queue



Waiting in queue	Jobs which still have to be exported.
Successfully sent	Jobs which have been successfully exported.
Sending failed	Jobs which were aborted or failed to export.
Cancel	Cancel job.
Redo	Redo or cancel job.
Delete	Delete job.
i	Further information about the job.

Print queue



Waiting in queue	Jobs which still have to be printed.
Successfully sent	Jobs which have been successfully printed.
Sending failed	Jobs which were aborted or failed to print.
Cancel	Cancel job.
Redo	Redo or cancel job.
Delete	Delete job.
i	Further information about the job.

Quality assurance

PHILIPS Patient list Examination Review Print System

General Export queue Print queue Quality assurance Settings Administration

Monitor Printer Export Image plate reader Test images Reject analysis Plate statistics

Size	Image plate ID	First usage	Type	Total usage	Usage since clean	Last cleaning	Cleaned	Currently used
24CMX30CM	21212121	Sep 5, 2005 3:47...	simulator,1.3	1	1		Reset	
24CMX30CM	23232323	Sep 5, 2005 3:48...	simulator,1.3	1	1		Reset	
24CMX30CM	99999999	Sep 5, 2005 3:32...	simulator,1.3	1	1		Reset	
35CMX35CM	34343434	Sep 5, 2005 3:29...	simulator,1.3	1	1		Reset	
35CMX35CM	55555555	Sep 5, 2005 3:42...	simulator,1.3	1	1		Reset	
35CMX35CM	77777777	Sep 5, 2005 3:35...	simulator,1.3	1	1		Reset	
81MX101N	12345678	Sep 5, 2005 12:55...	simulator,1.3	6	6		Reset	

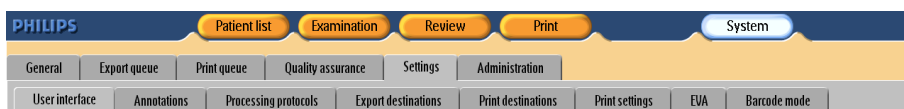
[Service@PCREleva01]

Size	Plate size
Image plate ID	Plate number/barcode
First usage	Date on which plate was first used on this workspot
Type	Plate type
Total usage	Number of times plate has been used since the date it was first used
Usage since clean	Number of times plate has been used since the last time it was cleaned
Last cleaning	Date on which plate was last cleaned
Currently used	Indicates if plate is no longer in use
Reset	Reset counter after cleaning

Please note that the data applies to this workspot only. If you use the plate on more than one workspot,

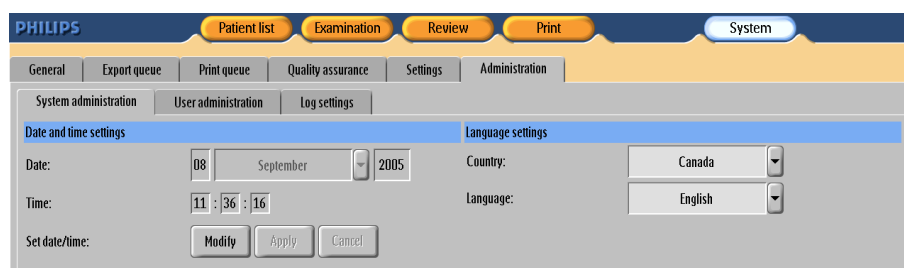
- you must add up each separate instance of use,
- you must document cleaning by pressing “Reset” on every workspot.

Settings



User interface	<ul style="list-style-type: none"> - Define general functions for the workflow. - Define the layout of the examination buttons. - Define image display. - Turn virtual keyboard on/off.
Annotations	Generate image annotations and define their size.
Processing protocols	Delete or change image processing protocols according to different sorting criteria.
Export destinations	Enter export destinations and put them in order of priority.
Print destinations	Assign different print formats to different printers.
Print settings	Assign different layouts to different printers.
EVA	<ul style="list-style-type: none"> - Change workflow parameters. - Change examination parameters. - Change RIS codes.

Administration



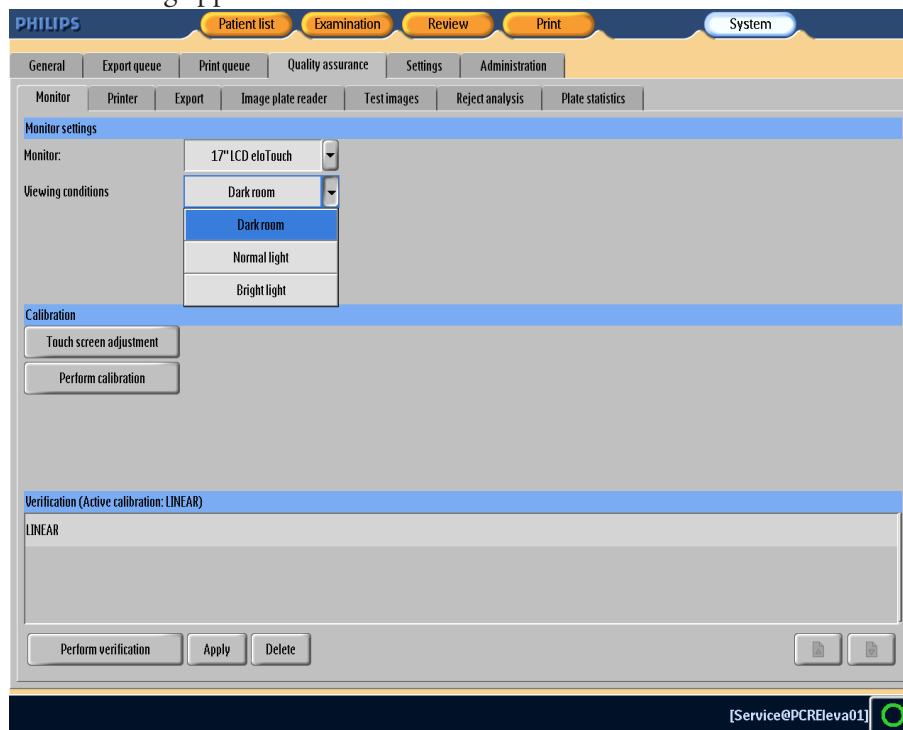
Here you can set:

- Date
- Time
- Language

11.1 Adjusting the touch screen

Quality assurance 1 Select Quality assurance

Monitor 2 Select Monitor
The following appears



11.1.1 Brightness

Monitor 1 Select the touch screen ("17" LCD eloTouch")

Viewing conditions 2 Select the ambient light in which the monitor is used.

11.1.2 Calibration

You should always calibrate the monitor when the mouse pointer or the monitor's reactions to finger pressure do not correspond to the point you have clicked or touched on the screen.

Touch screen adjustment 1 Select Touch Screen adjustment
Crossed hairlines appear at one point on the screen.

2 Touch it from the normal perspective.
Two more crossed hairlines appear one after another.

3 Touch them from the normal perspective also.

4 Confirm your selection.

Perform calibration 5 Select Perform calibration
The monitor is calibrated.

12 Service, cleaning, disposal

12.1 Service

As with any technical appliance this device also requires

- proper operation,
- regular testing by the user,
- regular service and maintenance.

By taking these precautions you maintain the operability and operational reliability of the system. As the user of the X-ray unit you are obliged according to local and national regulations (e.g. accident prevention regulations and Medical Product Law) to take such preventive actions.

Maintenance consists of tests which the user can perform and servicing which is performed under service agreements, Philips service orders or by persons explicitly authorized to do so by Philips.

12.1.1 Safety checks

The safety checks relate to function and operational reliability. **They must be performed at least every 2 years.** These checks constitute part of preventive maintenance under service agreements from Philips. They cover

- Visual checking for completeness and apparent damage or defects as well as soiling, sticking parts and wear and tear which may affect safety;
- Testing the monitoring, safety, display and indicating systems;
- Measuring the safety-relevant output parameters;
- Checking electrical safety and the internal energy supply;
- For the particular product, other special technical tests according to the generally accepted standards of engineering practice;
- Other tests specified by the manufacturer;
- Recording results and filing the test reports in the X-ray system manual (medical products logbook).

Medical-technical systems contain mechanical components which are subjected to wear and tear due to operation.


The correct setting of the electromechanical and electronic assemblies affects the functioning, image quality, electrical safety and exposure of the patient and medical personnel to radiation.

- Philips recommends:
- that the user perform the tests indicated in the table on a regular basis.
 - that you have the device serviced by the Philips Service Organization at least once a year. You must have heavily used equipment serviced more frequently.

In this way you avoid endangering the patient and you meet your obligations.

By entering into a service agreement with Philips you retain the value and safety of your equipment. All the necessary maintenance, including the safety tests for the purpose of preventive avoidance of danger and the necessary settings for optimal image quality and minimum exposure to radiation, are performed at regular intervals. Philips agrees on these intervals with you, taking the legal requirements into account.

12.1.2 Repairs



DANGER!

Faulty components which affect the safety of the equipment must be replaced by genuine spare parts.

12.1.3 Recording results

- Service and repairs must be entered in the medical products logbook, including the following data:
- type and scope of work,
 - if necessary, details of any changes to ratings or the working zone,
 - date, person performing the work, signature.

12.2 Tests by the user

The user must check this device for apparent defects (see table). If operational defects or other deviations from normal operational behavior occur, he must switch off the device and inform the Service Organization. He may only resume operation of the device after it has been repaired. Operation using faulty components may lead to an increased safety risk.

Interval	Scope	Method
Daily	Faulty display lamps, damaged components, labels, warning signs	Inspection
Weekly	All cables and terminals (damage, breakage)	Inspection
Monthly	Cleaning the image plates	Service
Every 3 months	Cleaning the plate reader (see the following section)	Service

12.3 Cleaning



When selecting a detergent bear the following in mind:

You may only clean plastic surfaces with soap and water. If you use other cleansers (e.g. with a high alcohol content), the material will become dull or tend to crack. Never use any caustic, solvent or abrasive detergent or polish.

When cleaning remember the following:



DANGER!

- **Before cleaning the equipment switch off at the mains.**
- **Ensure that no water or liquid can enter the equipment. This will prevent short circuits in the electrical system and corrosion on components.**



You should wipe enameled parts and metal surfaces only with a damp cloth and mild detergent and then rub with a dry absorbent cloth.

12.3.1

Cleaning the PCR plate reader

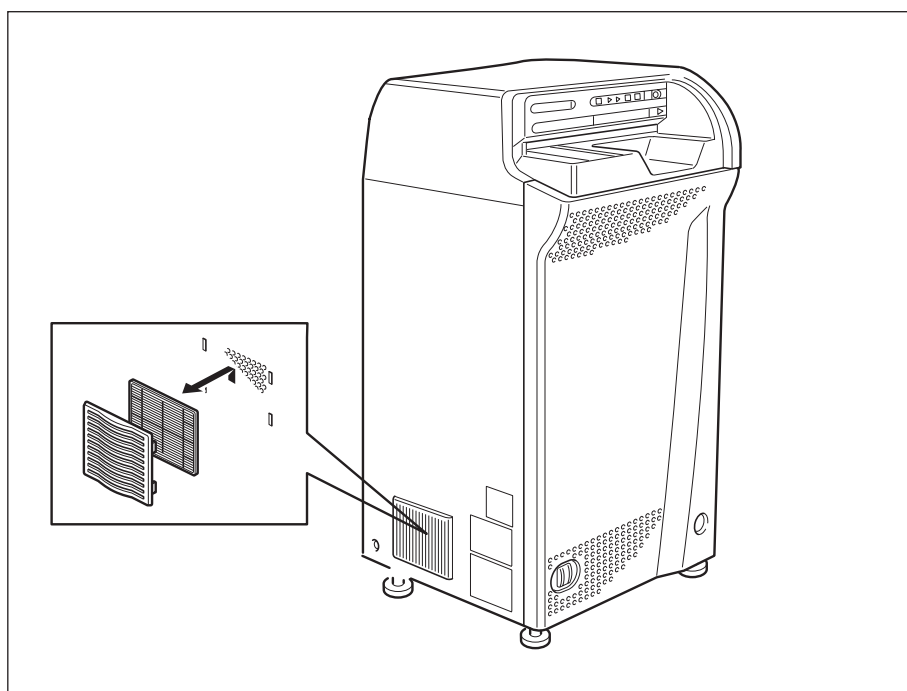
PCR Compagno plate reader



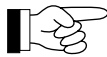
Turn off the plate reader at the main switch before starting cleaning.

Remove any dust from the outside of the plate reader approximately every three months. First work with a vacuum cleaner and use a slightly moist cloth for cleaning. Then remove any remaining moisture with a dry cloth.

Take out the dust filter on the left side of the device in one piece together with the filter cover. Afterwards remove the cover first of all and then take out the filter insert. Clean it with a vacuum cleaner.



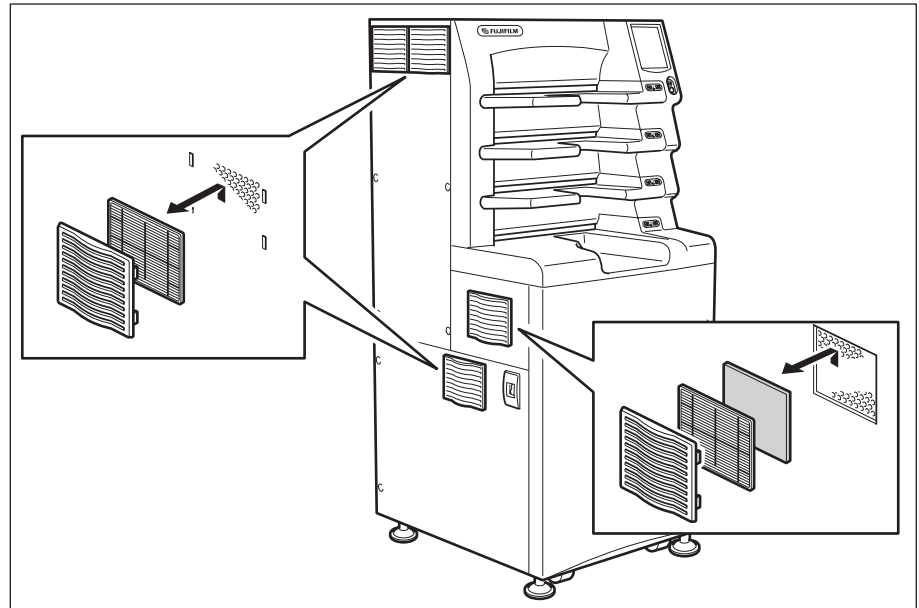
PCR Corado and CosimaX plate readers



Turn off the plate reader at the main switch before starting cleaning.

Remove any dust from the outside of the plate reader approximately every three months. First work with a vacuum cleaner and use a slightly moist cloth for cleaning. Then remove any remaining moisture with a dry cloth.

Take out the dust filter on the left side of the device in one piece together with the filter cover. Afterwards remove the cover first of all and then take out the filter insert. Clean it with a vacuum cleaner.



12.3.2

Cleaning image plates

Warning!

Always handle the front and back of image plates with great care. Ensure that the surface of the image plate does not get scratched or otherwise damaged.



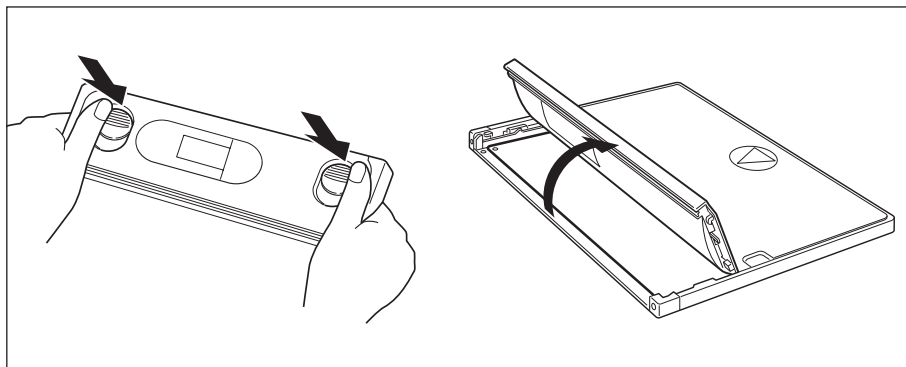
A cleaned image plate must be dry before it is used again.

Also handle the cassettes carefully and avoid heavy physical wear and tear – for instance by bumping or dropping the cassette.

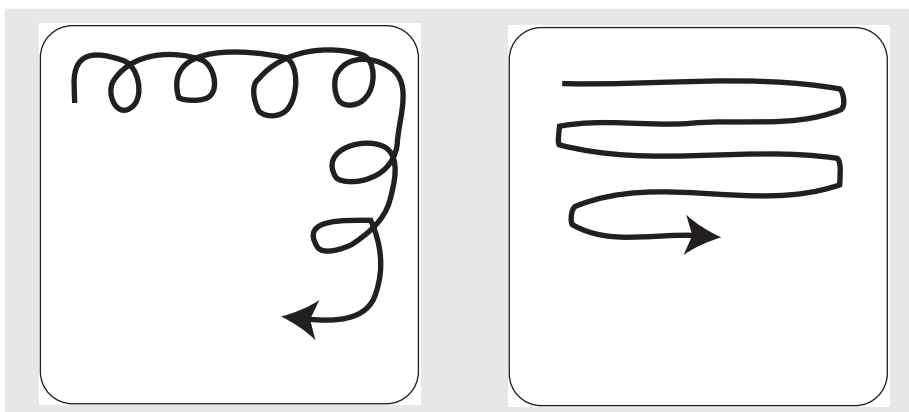
Have the supplied sheet for cleaning the image plate ready. Use lint-free cotton (gauze 100% cotton) or lens cleaning cloths for cleaning.

Once a month remove the image plates from the cassette and check whether dust or dirt has gathered on the surface.

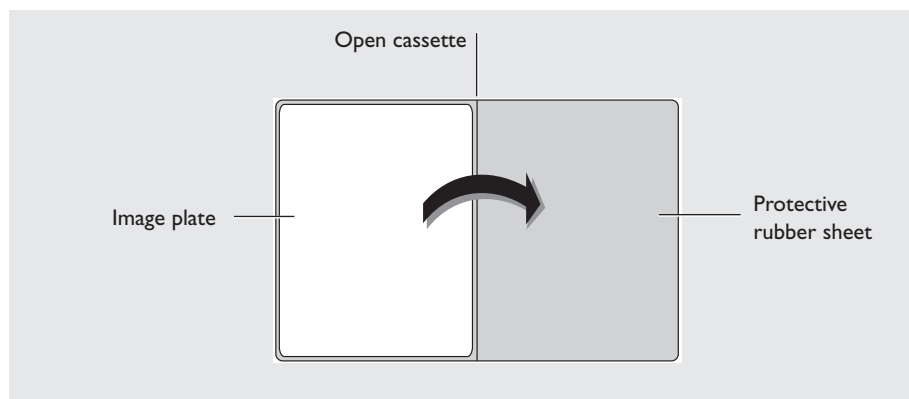
- 1 Unlock the cassette lid by slipping across the locks on the back of the cassette, and open the lid.



- 2 Clean the top side first of all. Move the cleaning cloth over the image plate gently, as follows:



- 3 Then turn over the image plate and clean the other side.



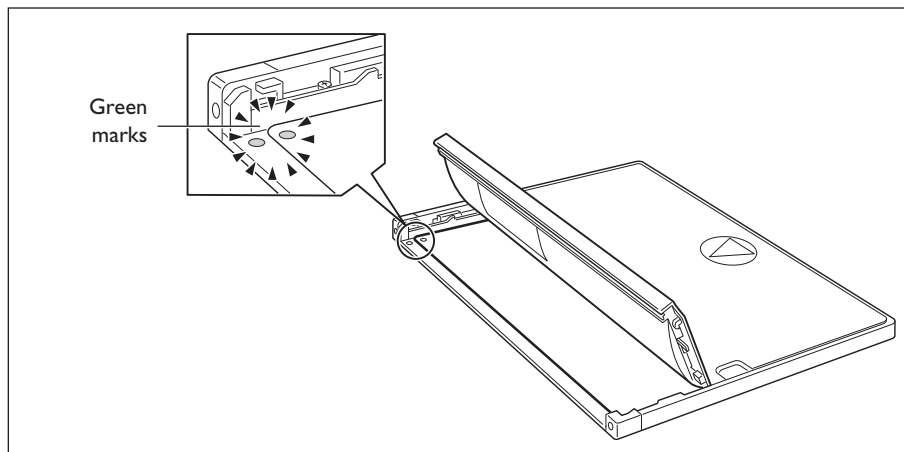
Remove dust and dirt from both sides of the image plate, not only from the phosphorescent side.

If specks of dirt cannot be removed by this method, moisten the cleaning cloth with ethanol. Do not use any other detergents besides this e.g. solvents. If you use ethanol, bear the following in mind:

- 4 Wipe the image plate with a dry cloth afterwards.
If you frequently clean the image plate with ethanol, the edges may turn yellow with time. This does not impair function, however.
- 5 Next, place the image plate carefully back into the cassette with the front of the plate facing the same direction as the front of the cassette.



The back of HR-BD plates (mammography) has a yellowish shine and is identified with a green mark. In the cassette, too, there is a green mark on the top edge, which is located above the green mark on the image plate. The green mark on the back of the image plate must be aligned with the green mark on the mammography cassette.



- 6 Before you close the cassette again, ensure that the image plate is not jutting out of the cassette.
Lock the cassette lid by slipping across the locks on the back of the cassette.

12.4 Disposal



This medical device is taken back and disposed of in an environmentally safe manner in accordance with the “Waste Electrical and Electronic Equipment” (WEEE) directive and/or corresponding national requirements.

The symbol used to indicate separate collection of electrical appliances and electronics is a crossed-out wheelie bin.

Philips manufactures state-of-the-art medical devices in terms of safety and environmental protection. Assuming no parts of the system housing are opened and assuming the system is used properly there are no risks to persons or the environment.

For complying with regulations it is necessary to use materials which may be harmful to the environment and therefore have to be disposed of in a proper manner.



DANGER!

For this reason you must not dispose of the X-ray equipment together with normal industrial or domestic waste.

Philips

- Supports you in disposing of the medical device described in a proper manner
- Returns reusable parts to the production cycle via certified disposal companies and
- Helps to reduce environmental pollution.

Please contact the Philips Service Organization in full confidence.

13 Technical data

13.1 General data

Ambient conditions	
In operation:	
– Temperature	+15°C to +30°C
– Rel. humidity	40% to 80%, no condensation
In transit and storage	
– Temperature	0°C to +45°C
– Rel. humidity	10% to 90%, no condensation
Power supply	
Mains voltage	100 V to 120 V ±10% or 200 V to 240 V ±10%
Mains frequency	50 Hz/60 Hz

13.1.1 Operator's console

Monitor	17" touch screen or 17" flat screen
PC	Desktop
Interfaces	– Ethernet – USB
Load power	0.2 kVA
Heat dissipation	150 W
Dimensions:	
– 17" touch screen (W x H x D)	424 mm x 430 mm x 244 mm
– 17" flat screen (W x H x D)	375 mm x 431 mm x 210 mm
– PC (W x H x D)	310 mm x 84 mm x 328 mm
Weights:	
– Touch screen	9.5 kg
– Flat screen	5.8 kg
– PC	8.5 kg

13.1.2 PCR Compano plate reader

Plate throughput	max. 90 plates/h (18 cm x 24 cm)
Cassette release	40 s to 64 s, depending on cassette size
Gray scale depth when reading	12 bit/pixel (4096 gray scales)
Load power	0.6 kVA
Heat dissipation	230 W
Dimensions (W x H x D)	550 mm x 1065 mm x 515 mm
Weight	155 kg

Cassette sizes

The plate reader can be configured to cassette sizes in inches or metric.

Metric setting	Inch setting
35 cm x 43 cm	14" x 17"
35 cm x 35 cm	14" x 14"
24 cm x 30 cm	10" x 12"
18 cm x 24 cm	8" x 10"

Processing times

The following data is based on the processing of one image plate from automatic unloading from the cassette to loading after processing.

Cassette sizes	Processing times
35 cm x 43 cm (14" x 17")	approx. 56 plates/h
35 cm x 35 cm (14" x 14")	approx. 64 plates/h
24 cm x 30 cm (10" x 12")	approx. 69 plates/h
18 cm x 24 cm (8" x 10")	approx. 90 plates/h

Image sizes in pixels

Cassette sizes	Standard matrix		High resolution	
	Matrix	Pixels/mm	Matrix	Pixels/mm
35 cm x 43 cm	1760 x 2140	5	3520 x 4280	10
35 cm x 35 cm	1760 x 1760	5	3520 x 3520	10
24 cm x 30 cm	1576 x 1976	6.7	2364 x 2964	10
18 cm x 24 cm	1770 x 2370	10	1770 x 2370	10
14" x 17"	1760 x 2140	5	3520 x 4280	10
14" x 14"	1760 x 1760	5	3520 x 3520	10
10" x 12"	1670 x 2010	6.7	2505 x 3015	10
8" x 10"	2000 x 2510	10	2000 x 2510	10
Gray scale depth when reading: 12 bit/pixel				

13.1.3 PCR Corado and CosimaX plate readers

Plate throughput	max. 165 plates/h (18 cm x 24 cm)
Cassette release	37 s - 85 s, depending on cassette size
Gray scale depth when reading	12 bit/pixel (4096 gray scales)
Load power	1.4 kVA
Heat dissipation	500 W
Dimensions (W x H x D)	655 mm x 1480 mm x 740 mm
Weight	285 kg

Cassette sizes

The plate reader can process cassette sizes in metric or inches with no need for adjustment.

Metric format	Inch format
35 cm x 43 cm	14" x 17"
35 cm x 35 cm	14" x 14"
24 cm x 30 cm	10" x 12"
18 cm x 24 cm	8" x 10"
24 cm x 30 cm HR ¹⁾	
18 cm x 24 cm HR ¹⁾	
24 cm x 30 cm HR-BD ²⁾	
18 cm x 24 cm HR-BD ²⁾	
24 cm x 30 cm ST-BD ³⁾	
18 cm x 24 cm ST-BD ³⁾	

1) High Resolution

2) High Resolution Base transparent Detect (double-sided readout)

2) Standard Base transparent Detect (double-sided readout)

Processing times

The following data is based on the processing of one image plate from automatic unloading from the cassette to loading after processing.

Cassette sizes	Processing times
35 cm x 43 cm (14" x 17")	approx. 103 plates/h
35 cm x 35 cm (14" x 14")	approx. 120 plates/h
24 cm x 30 cm (10" x 12")	approx. 128 plates/h
18 cm x 24 cm (8" x 10")	approx. 165 plates/h
24 cm x 30 cm HR ¹⁾	approx. 90 plates/h
18 cm x 24 cm HR ¹⁾	approx. 110 plates/h
24 cm x 30 cm HR-BD ²⁾	approx. 65 plates/h
18 cm x 24 cm HR-BD ²⁾	approx. 80 plates/h
24 cm x 30 cm ST-BD ³⁾	approx. 65 plates/h
18 cm x 24 cm ST-BD ³⁾	approx. 80 plates/h

1) High Resolution

2) High Resolution Base transparent Detect (double-sided readout)

2) Standard Base transparent Detect (double-sided readout)

Image sizes in pixels

Cassette sizes	Standard matrix		High resolution	
	Matrix	Pixels/mm	Matrix	Pixels/mm
35 cm x 43 cm	1760 x 2140	5	3520 x 4280	10
35 cm x 35 cm	1760 x 1760	5	3520 x 3520	10
24 cm x 30 cm	1576 x 1976	6.7	2364 x 2964	10
18 cm x 24 cm	1770 x 2370	10	1770 x 2370	10
24 cm x 30 cm HR ¹⁾	2364 x 2964	10	2364 x 2964	10
18 cm x 24 cm HR ¹⁾	1770 x 2370	10	1770 x 2370	10
24 cm x 30 cm HR-BD ²⁾	2364 x 2964	10	4728 x 5928	20
18 cm x 24 cm HR-BD ²⁾	1770 x 2370	10	3540 x 4740	20
24 cm x 30 cm ST-BD ³⁾	1576 x 1976	6.7	2364 x 2964	10
18 cm x 24 cm ST-BD ³⁾	1770 x 2370	10	1770 x 2370	10
14" x 17"	1760 x 2140	5	3520 x 4280	10
14" x 14"	1760 x 1760	5	3520 x 3520	10
10" x 12"	1670 x 2010	6.7	2505 x 3015	10
8" x 10"	2000 x 2510	10	2000 x 2510	10

Cassette sizes	Standard matrix	High resolution
Gray scale depth when reading: 12 bit/pixel		

- 1) High Resolution
- 2) High Resolution Base transparent Detect (double-sided readout)
- 2) Standard Base transparent Detect (double-sided readout)

13.2 Electromagnetic compatibility (EMC) data

13.2.1 Electromagnetic emission

Radiated noise measurements	Compliance	Electromagnetic environment – guidelines
HF emission acc. to CISPR 11	Group 1	This system uses HF energy solely for its internal functioning. Its HF emissions are therefore very low, and it is unlikely to interfere with electronic apparatus in the vicinity.

13.2.2 Electromagnetic interference immunity – recommended safe distances

(between portable and mobile HF telecommunications equipment and this system)

The system is designed for operation in an electromagnetic environment in which HF interference is controlled. The user of the system can help prevent electromagnetic interference by observing the minimum distance between mobile HF telecommunications equipment (transmitters) and the system. This depends on the output of the communications equipment, as given below.

Nominal power of the transmitter [W]	Safe distance depending on the transmitter frequency [m]		
	150 kHz to 80 MHz $d = \left[\frac{3,5}{3} \right] \sqrt{P}$	80 MHz to 800 MHz $d = \left[\frac{3,5}{3} \right] \sqrt{P}$	800 MHz to 2.5 GHz $d = \left[\frac{7}{3} \right] \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.67	3.67	7.38
100	11.66	11.66	23.33

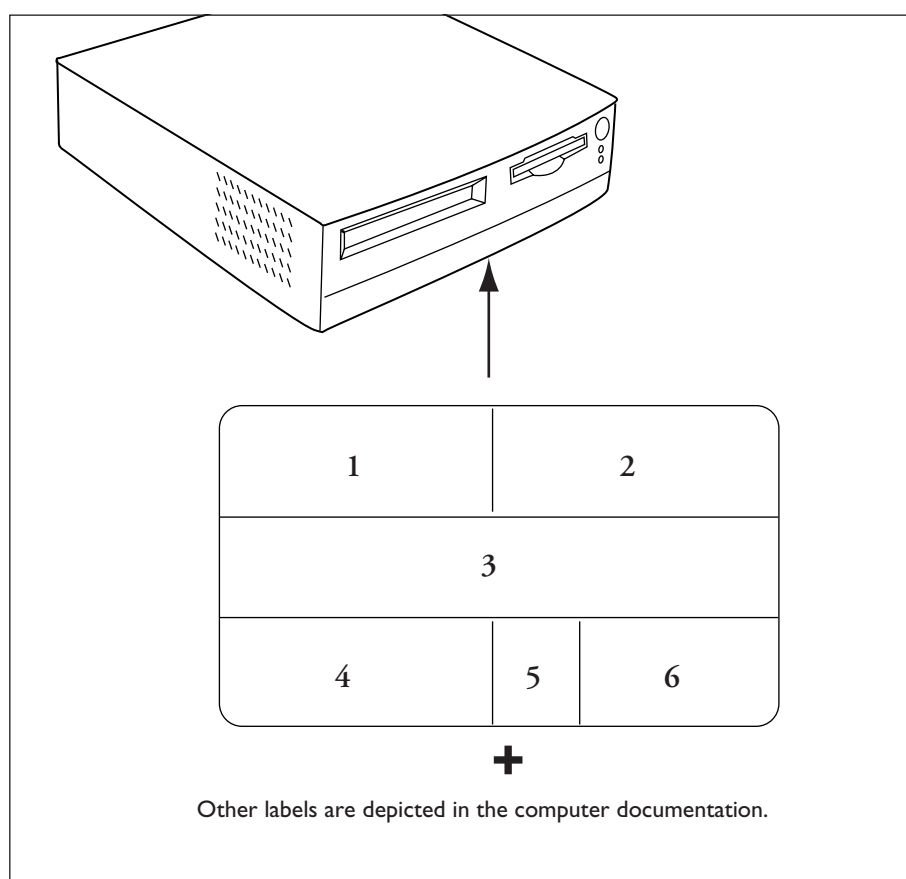
For transmitters whose maximum nominal power is not given in the above table, the recommended safe distance d in meters [m] can be calculated using the equation for the relevant column, where P is the maximum nominal power of the transmitter in watts [W] as specified by the transmitter manufacturer.



- *If the value is exactly 80 MHz or 800 MHz the higher frequency range applies in each case.*
- *The guidelines do not apply in all cases. The propagation of electromagnetic effects is influenced by absorption by and reflection off buildings, objects and people.*

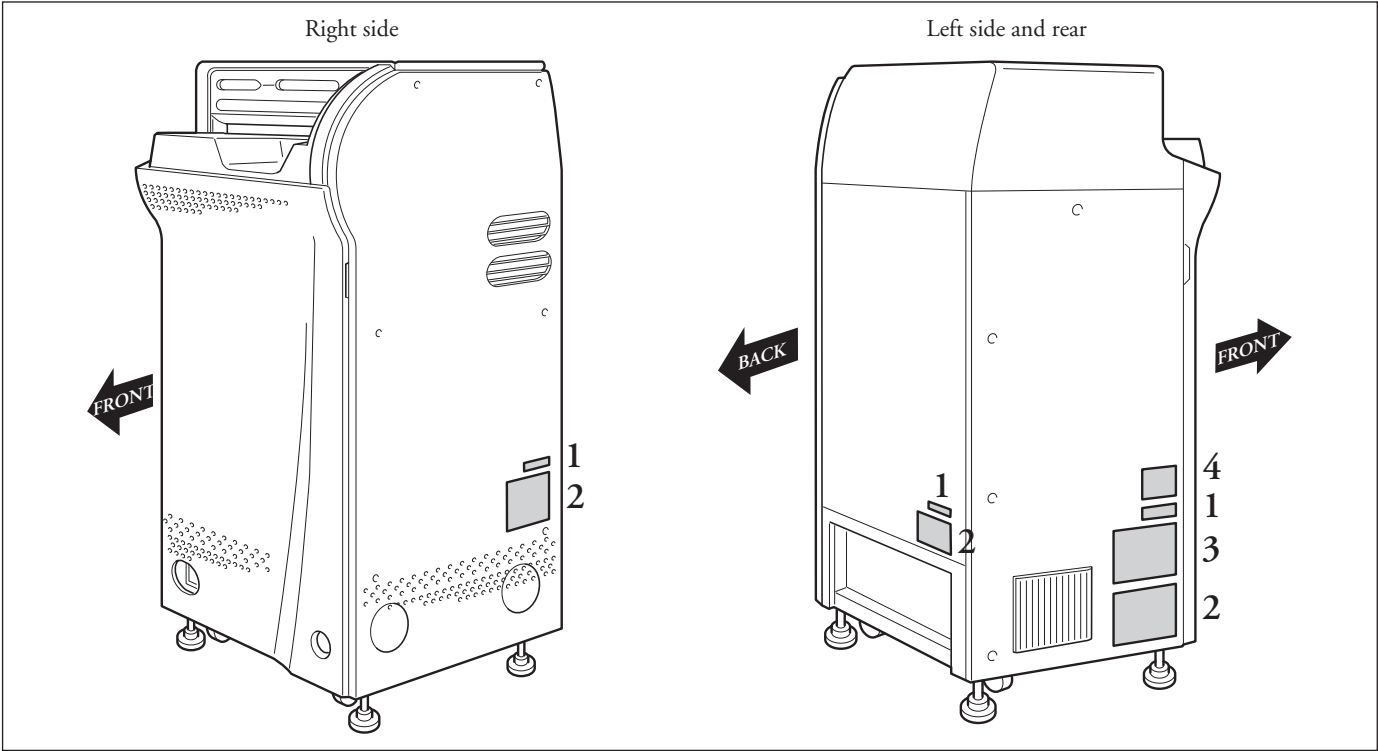
13.3 Labels

13.3.1 Operator's console



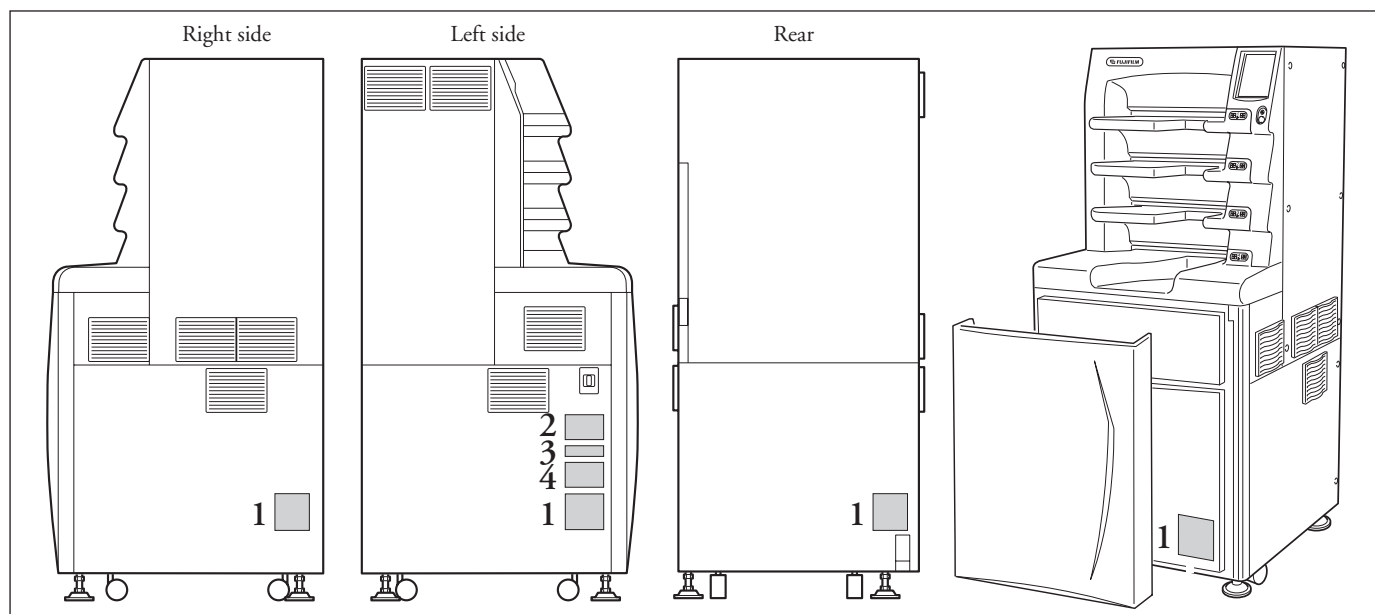
1	Logo	4	Type number
2	Address	5	Disposal information
3	Type	6	CE

13.3.2 PCR Compano plate reader



1	HHS label #1	3	EN60825-1:1996 Class 1 device
2	EN60825-1:1996 Class IIIb label	4	HHS certification and identification

13.3.3 PCR Corado and CosimaX plate readers



1	IEC/EN60825-1:2001 Device class 3 label	3	Manufacturer's plate
2	Data plate	4	HHS certification and ID

14 Appendix

14.1 Notes on radiography techniques with UM and DRR

The following chapters describe how you work with the radiography techniques UM and DRR.

Different radiography techniques

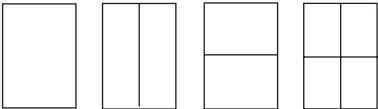
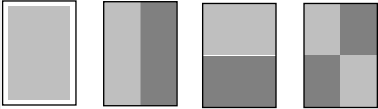
The following radiography techniques are available:

- Standard exposure
- Exposures with contrast media
- Tomography
- Tomography with contrast media

For each of these radiography techniques, distinct sets of parameters are programmed for reading out the image plate. To obtain good results, the chosen radiography technique and the setting must correspond with the actual exposure conditions.

Image plate formats

In all modes, the plate reader can detect the following subformats on an image plate:

Formats	Display
Undivided, divided in two vertically and horizontally, divided in four	
Using the areas without collimation	



The exposed area within a section must not be too small; at least a third of the area of a section must be exposed.

The sides of exposed sections must not overlap much with metal parts.

Modes (readout modes)

There are 4 modes for the plate reader (readout modes). You can set these on the operator's console in the System section.

- 1 Auto (standard setting)
Exposure and area of object are measured from the middle of the cassette to the edges of the collimation.
- 2 Semi
You use this mode for irregular collimations and ones that take up less than one third of the image plate. The middle of the image plate must be exposed, since the plate reader analyzes the exposure here.
- 3 Fix
The image plate acts like a conventional screen-film combination with fixed sensitivity. It is used in density techniques.
- 4 Manual
The image plate is read out in the Auto mode. Then a window appears on the monitor of the plate reader for the S and L values to be set manually.

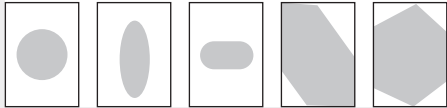

The Auto mode is the standard setting and can read out most exposures.

Warning!

Only the system manager may set the modes. For further information on this, refer to the Application Guide, which you are given after training by an application specialist.

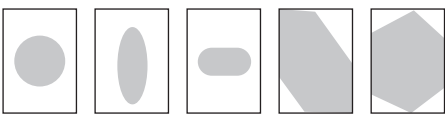
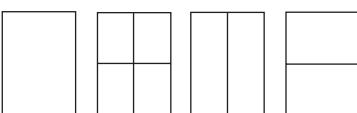

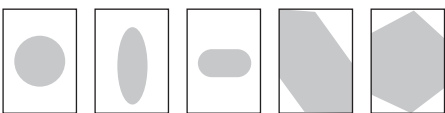
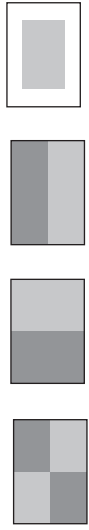
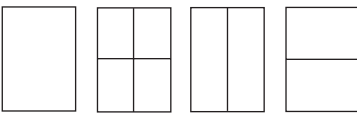
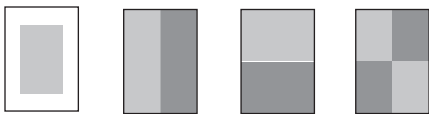
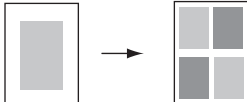
Notes on the Auto mode

The Auto mode is suitable for most exposures. The following collimations are available:

Collimations	Display
Circle, oval, rounded rectangle, irregular polygon	
Rectangle Collimating parallel to the edges of the image plate	

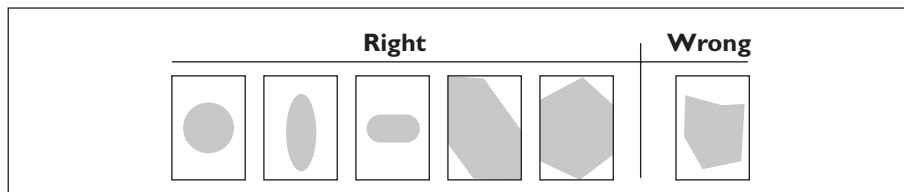
In the following figures the collimations shown here are used as symbols.

Overview of the body regions

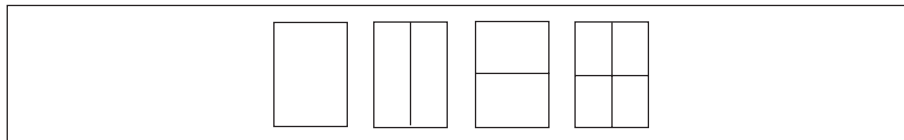
	Standard exposure	Exposure with contract medium	Tomography
Head	  See note 1		 See note 3
Neck			
Thorax			
Abdomen	 See note 2		 See note 4
Pelvis			
Upper extremities			
Lower extremities	 See note 1		
Exceptions	<p>Thorax exposures with contrast media, esophagus exposures or exposures of the intestinal tract with enema</p>  See note 4		
	<p>Stomach exposures</p>  See note 3		

Note 1

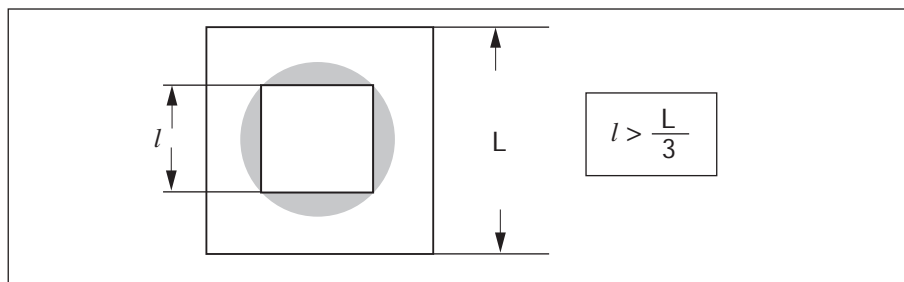
This collimation detection is used for standard exposures and exposures with contrast media from the head to the lower extremities. The following collimations are available:



You can divide up the image plate as follows:



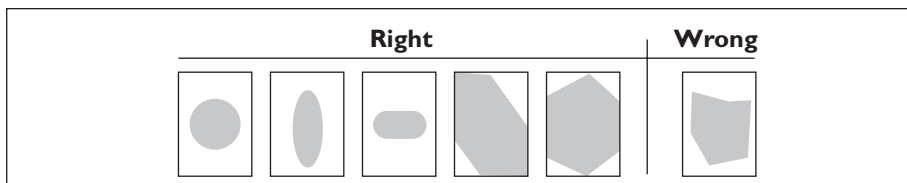
If you divide up the image plate, you must expose all sections. No section may remain unexposed. Do not choose too small a field for exposure. At least one third of the section must be exposed. For round collimations choose the diameter so that the length of the side of the enclosed square (l) is greater than a third of the length of the side of the section (L).



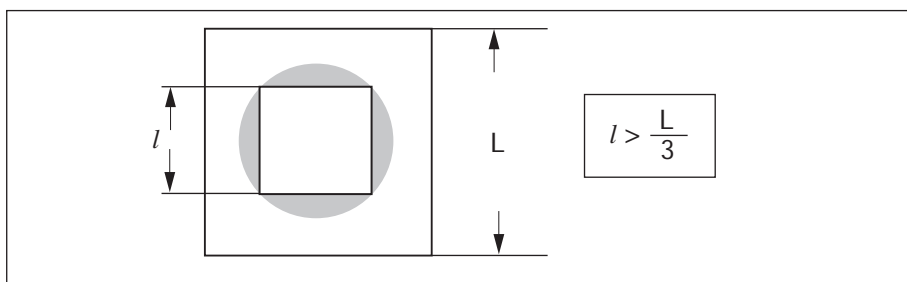
The borders of exposed sections must not overlap much with metal parts. Position the object you want to depict as exactly as possible in the middle of the image plate; if you are working with sections, then as exactly as possible in the middle of the section.

Note 2

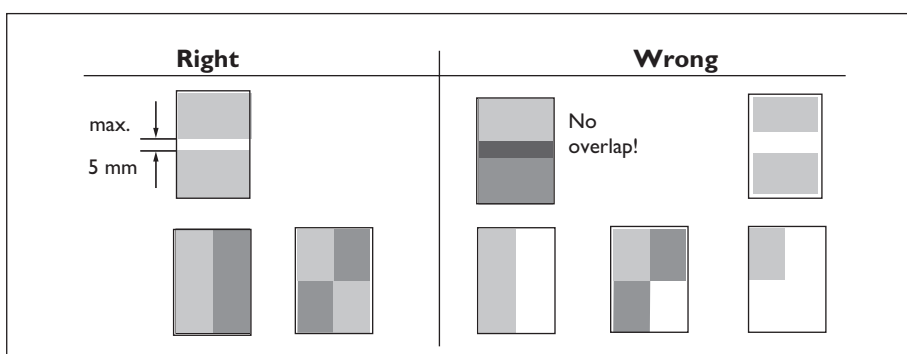
This collimation detection is used for standard exposures from the head to the pelvis. The following collimations are available:



Do not choose too small a field for exposure. At least **one third** of the section must be exposed. For round collimations choose the diameter so that the length of the side of the enclosed square (l) is greater than a third of the length of the side of the section (L).



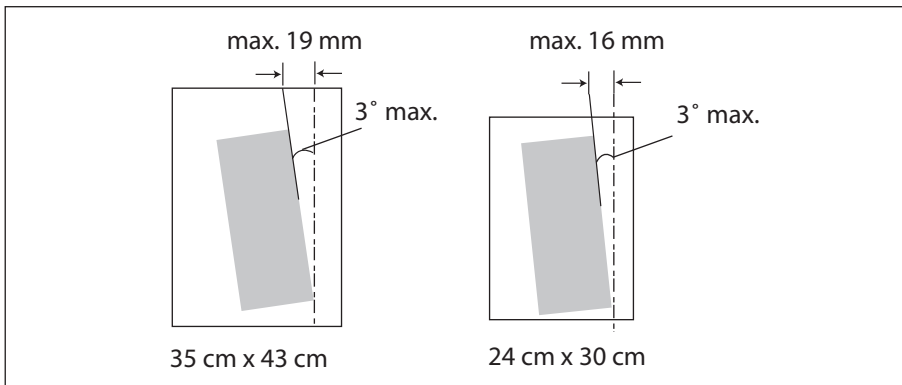
The borders of exposed sections must not overlap much with metal parts. If you divide up the image plate, you must expose the entire surface. Do not collimate in this case.



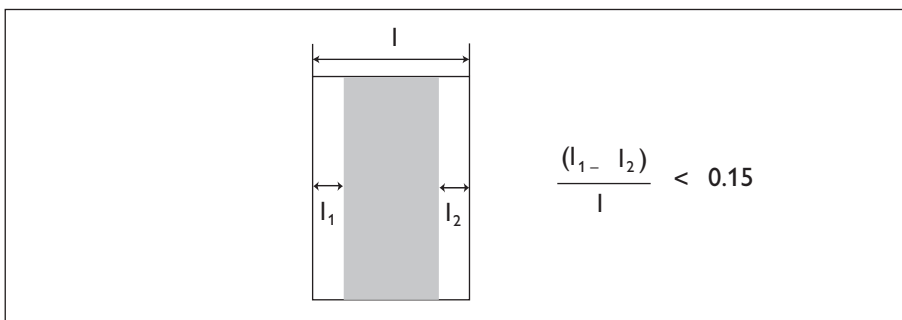
Note 3

This collimation detection is used for all tomographic exposures and for the extremities.

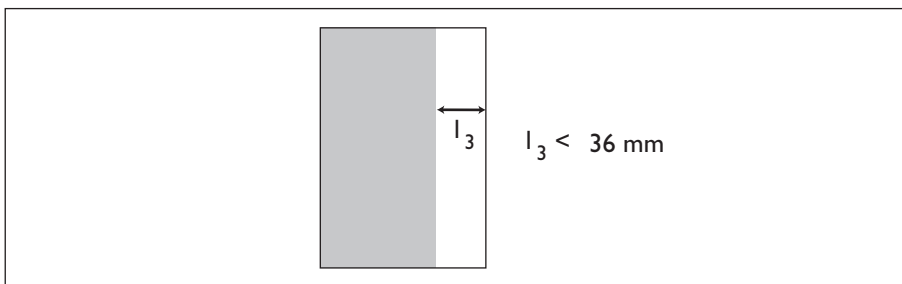
Position the cassette carefully in the exposure unit of the X-ray unit. Ensure that the collimation is parallel to the edges of the image plate. With rectangular collimations, the angle between the collimation and the edge of the image plate must be no more than 3°.



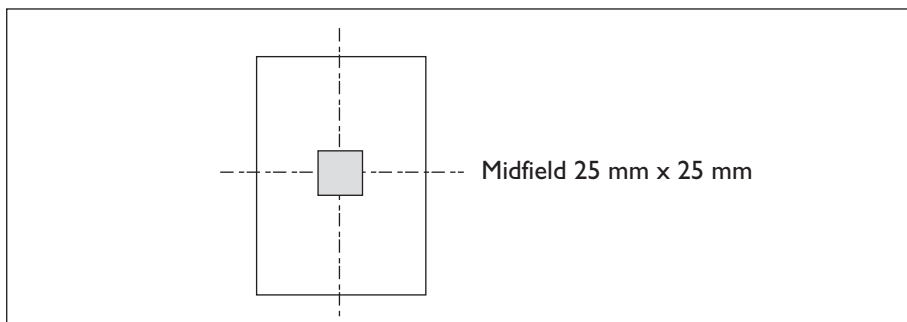
The following applies to symmetrical collimation:



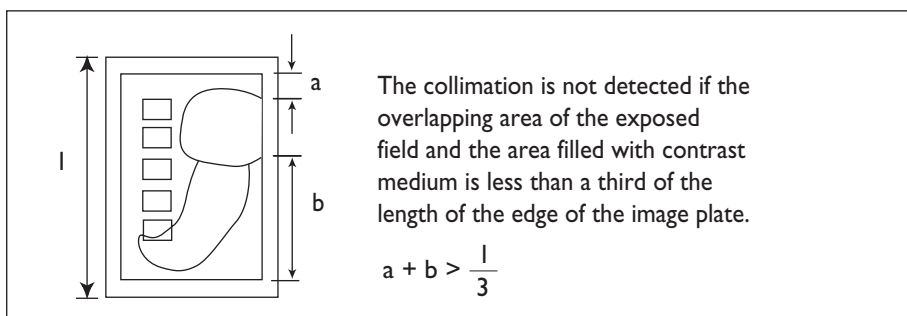
The following applies to one-sided collimation:



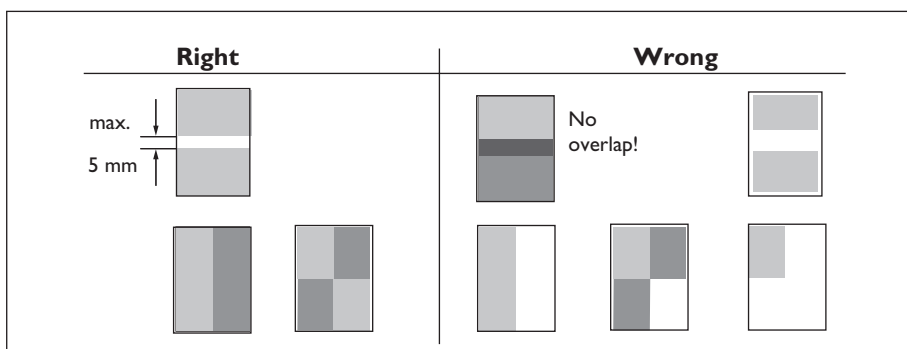
The midfield of the image plate must lie within the exposed area.



The length of the side (l) of the exposed field must be greater than **a third** of the short edge of the image plate.



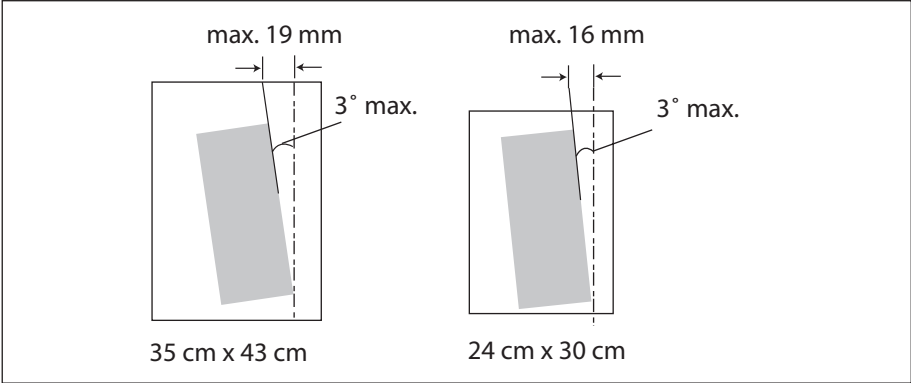
The borders of exposed sections must not overlap much with metal parts. If you divide up the image plate, you must expose the entire surface. Do not collimate in this case.



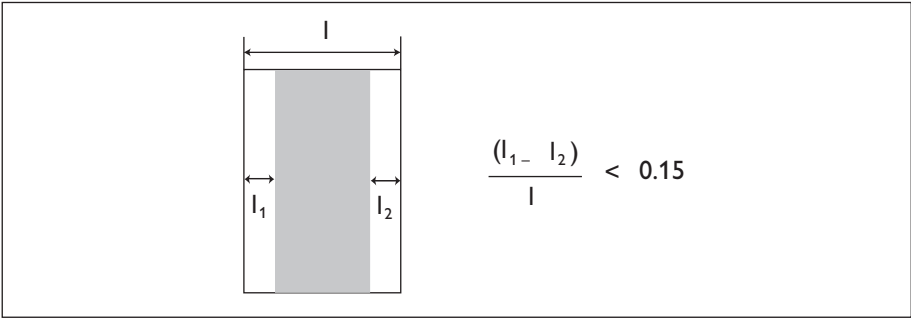
Note 4

This collimation detection is used for exposures of the stomach with contrast media and of the neck.

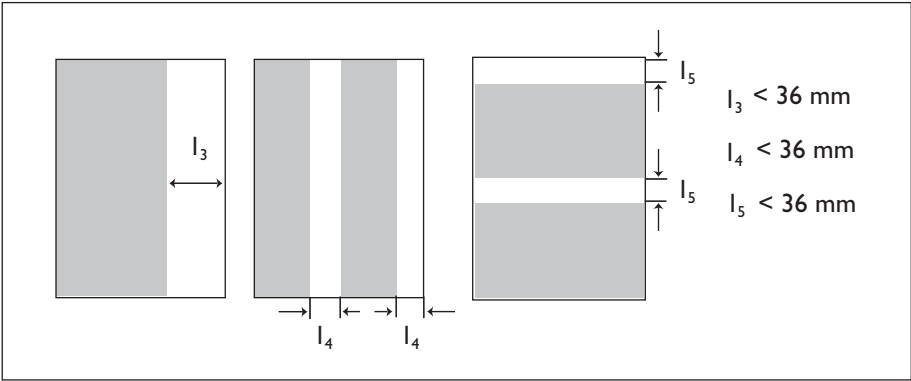
Position the cassette carefully in the exposure unit of the X-ray unit. Ensure that the collimation is parallel to the edges of the image plate. With rectangular collimations, the angle between the collimation and the edge of the image plate must be no more than 3°.



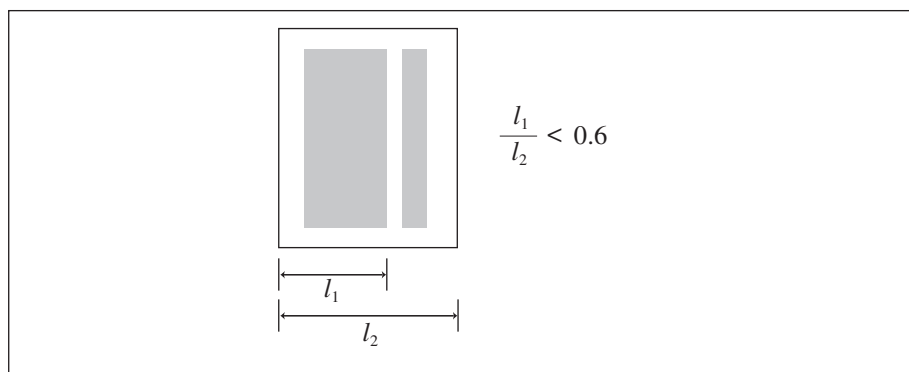
The following applies to symmetrical collimation:



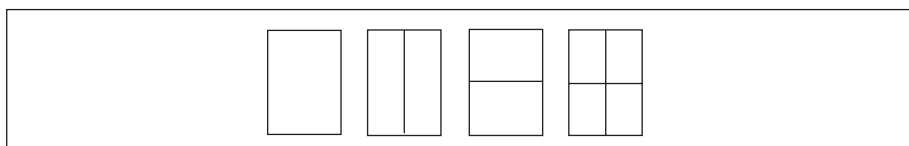
The following applies to one-sided collimation:



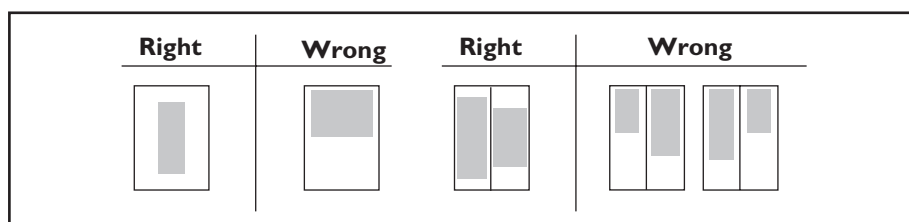
If you only use the image plate for one collimation, it must not extend excessively over one side of the image plate.



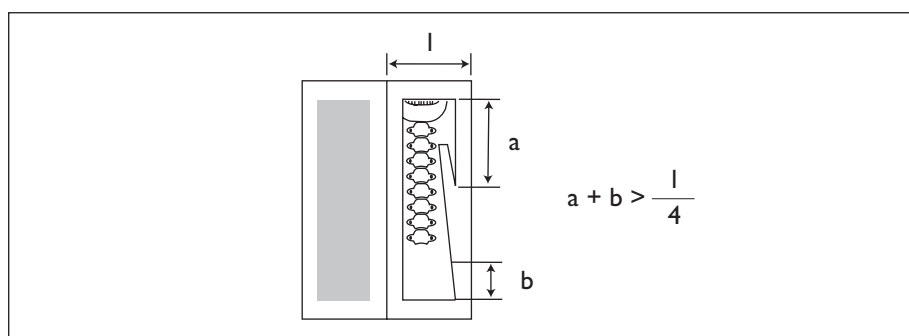
You can divide up the image plate as follows:



The length of the side (l) of the exposed field must be greater than a third of the short edge of the image plate. The midfield of the image plate must be exposed. The sections must also expose the midfield of the image plate.

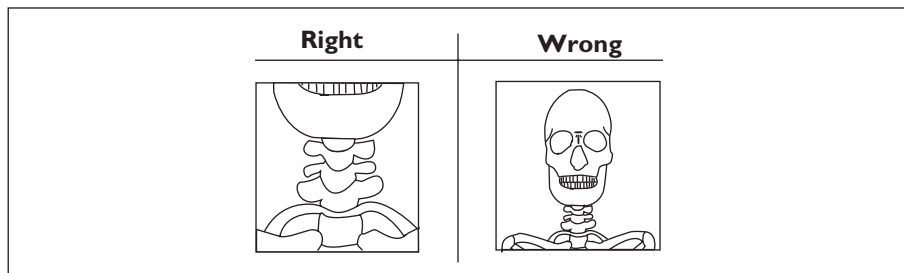


The borders of exposed sections must not overlap much with metal parts.

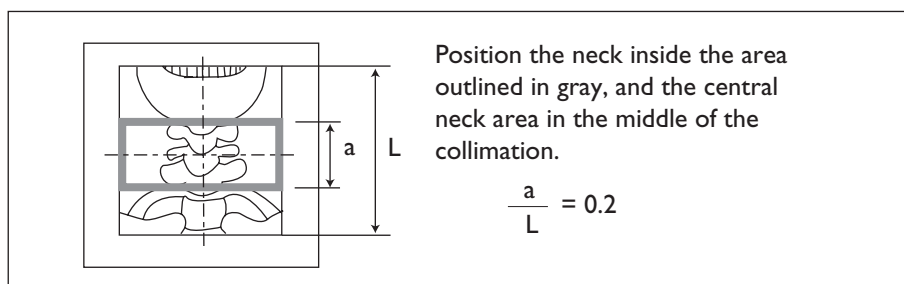


Notes on neck exposures

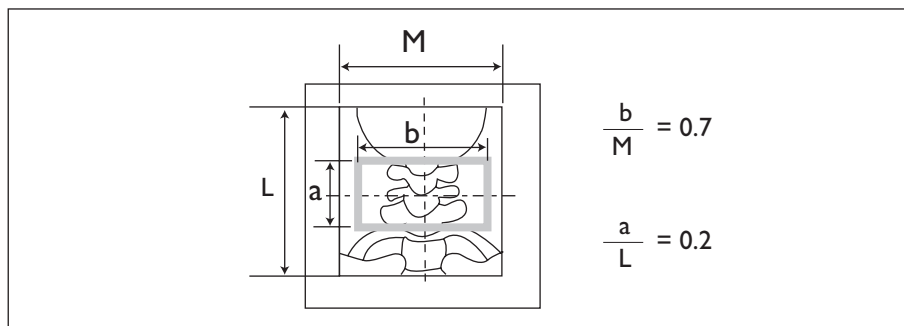
Pay attention to positioning:



Generally, pharynx and larynx are only depicted weakly in normal exposures. For this reason, you should use the readout mode “Fix” in these cases. This applies to exposures with and without contrast media. For AP exposures of the pharynx and larynx, position the neck in the field you wish to expose. It is important that the neck is centered vertically.

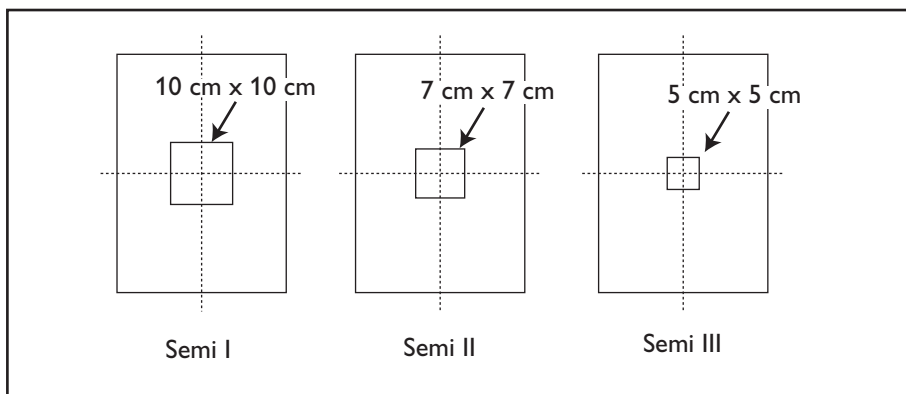


If you use lead type with pharynx and larynx exposures, it must not be placed within the area outlined in gray.



Notes on the Semi mode

Position the region of interest in the midfield of the image plate. The different measuring fields are assigned to particular exposures.



Do not position any insignificant parts of the object in the midfield. Adjust the tube voltage according to the thickness of the body part to be depicted.

Notes on the Fix mode

The parameters for reading out the image plate are fixed. The exposure conditions for an exposure do not differ from conventional X-ray exposures.

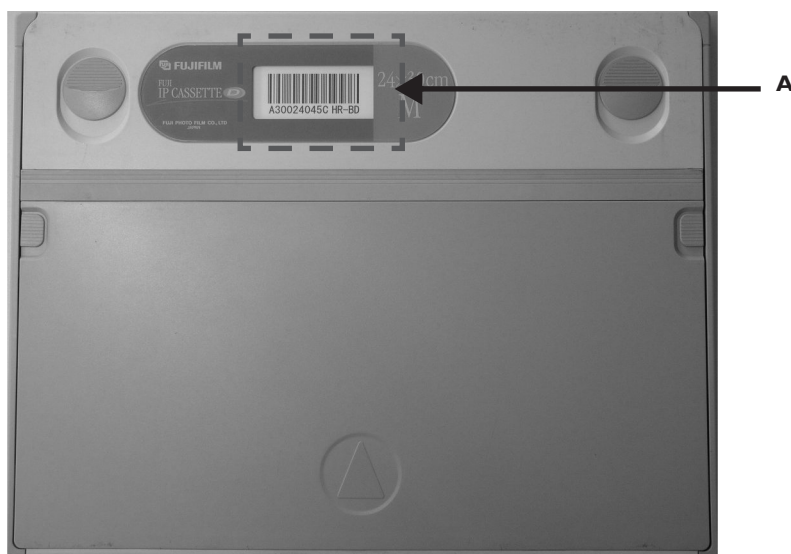
14.2 If the barcode reader is not working,

you can enter the barcode of the image plate using the keyboard:

- 1 Make sure that the right view is selected.
 - The background of the selected view of the examination type is blue:

You will find the barcode (A) on the top of the image plate.

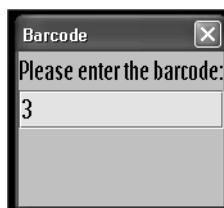
Transfer only the 8-digit sequence of numbers from the image plate.



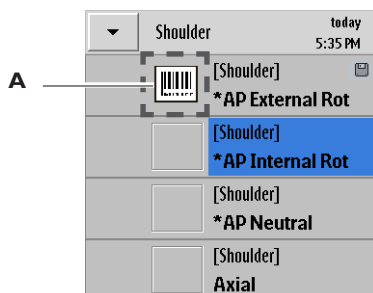


2 Type in barcode.

- A window appears for the numerical code to be entered.



- Once you have entered the final digit, the input window disappears and the barcode appears beside the view (A).



Take the planned X-ray exposures.

15 Glossary

DICOM

Digital **I**maging and **C**ommunication in **M**edicine. Medical technology standard for data formatting and transfer.

DICOM Worklist Management

Special DICOM standard for managing worklists.

Image plate

A reusable plate, stored in a cassette, which becomes electrically excited when struck by X-rays. When the image plate is read out with the aid of laser radiation a digital image is generated.

Mandatory fields

Entry fields which must be filled in in any case, otherwise one is not allowed to continue.

MRM code (menu code)

Designates a parameter set for the reading process on the plate reader depending on the type of examination.

PCR

Philips Computed Radiography; name of the image plate system from Philips in digital radiography.

RIS

Radiology Information System; central data input and management terminal for the radiology department.

S/L values

Manual setting on the plate reader:

S = (Sensitivity) value for the sensitivity when reading out the image plate (brightness).

L = (Latitude) value for the latitude when reading out the image plate (contrast).

